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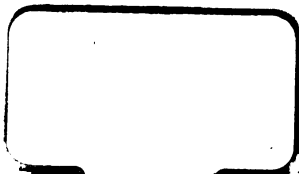
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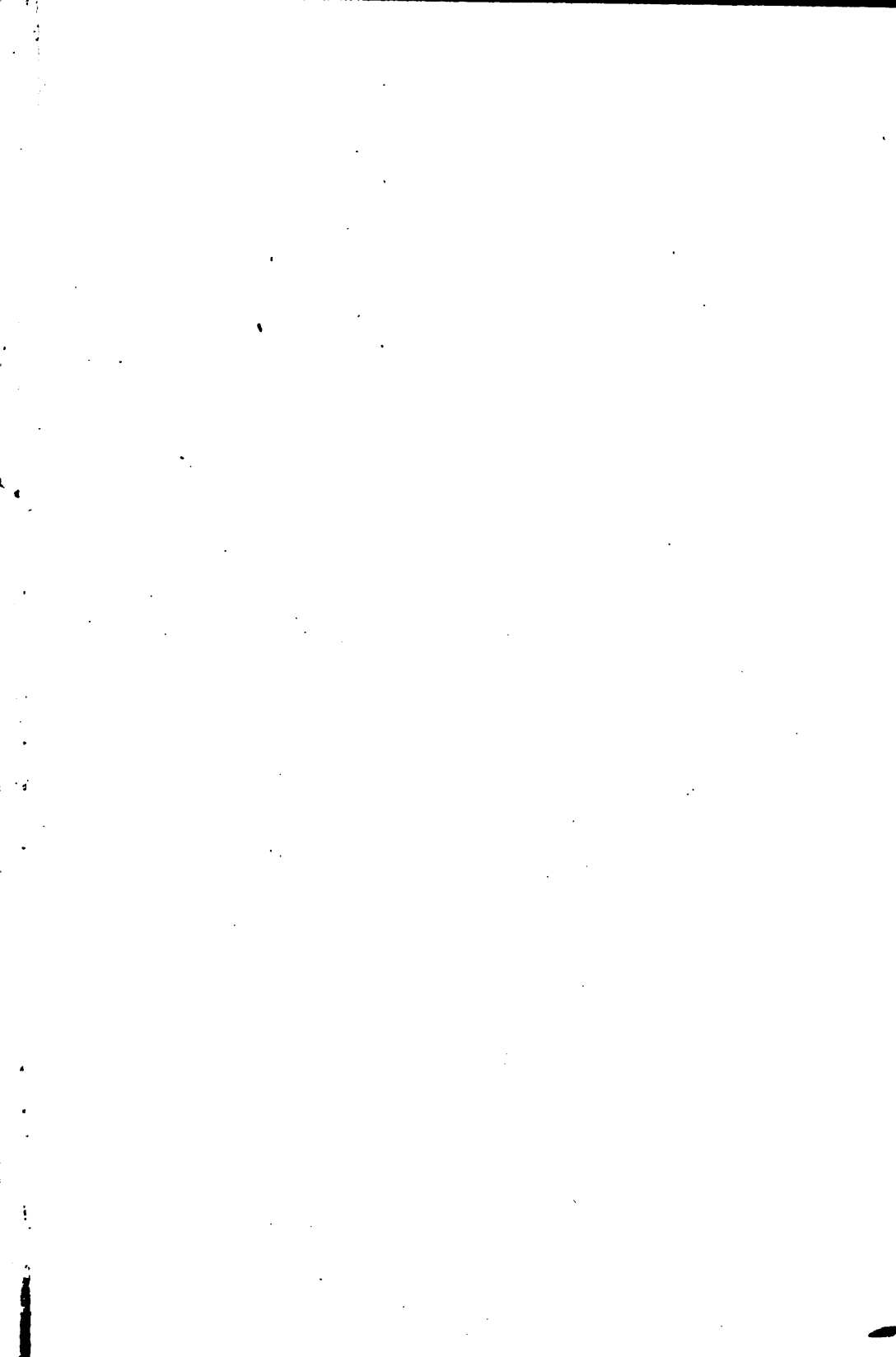
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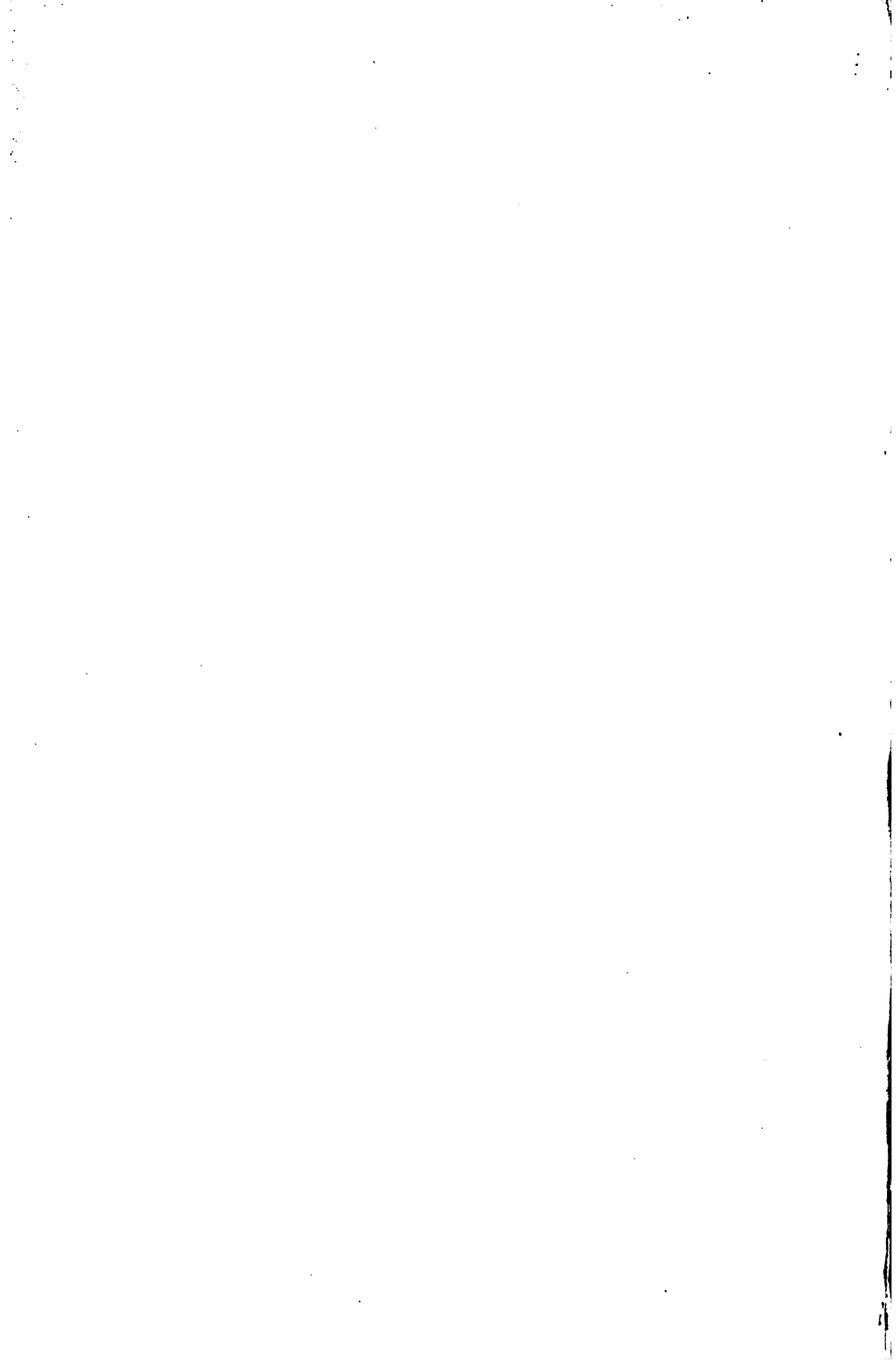
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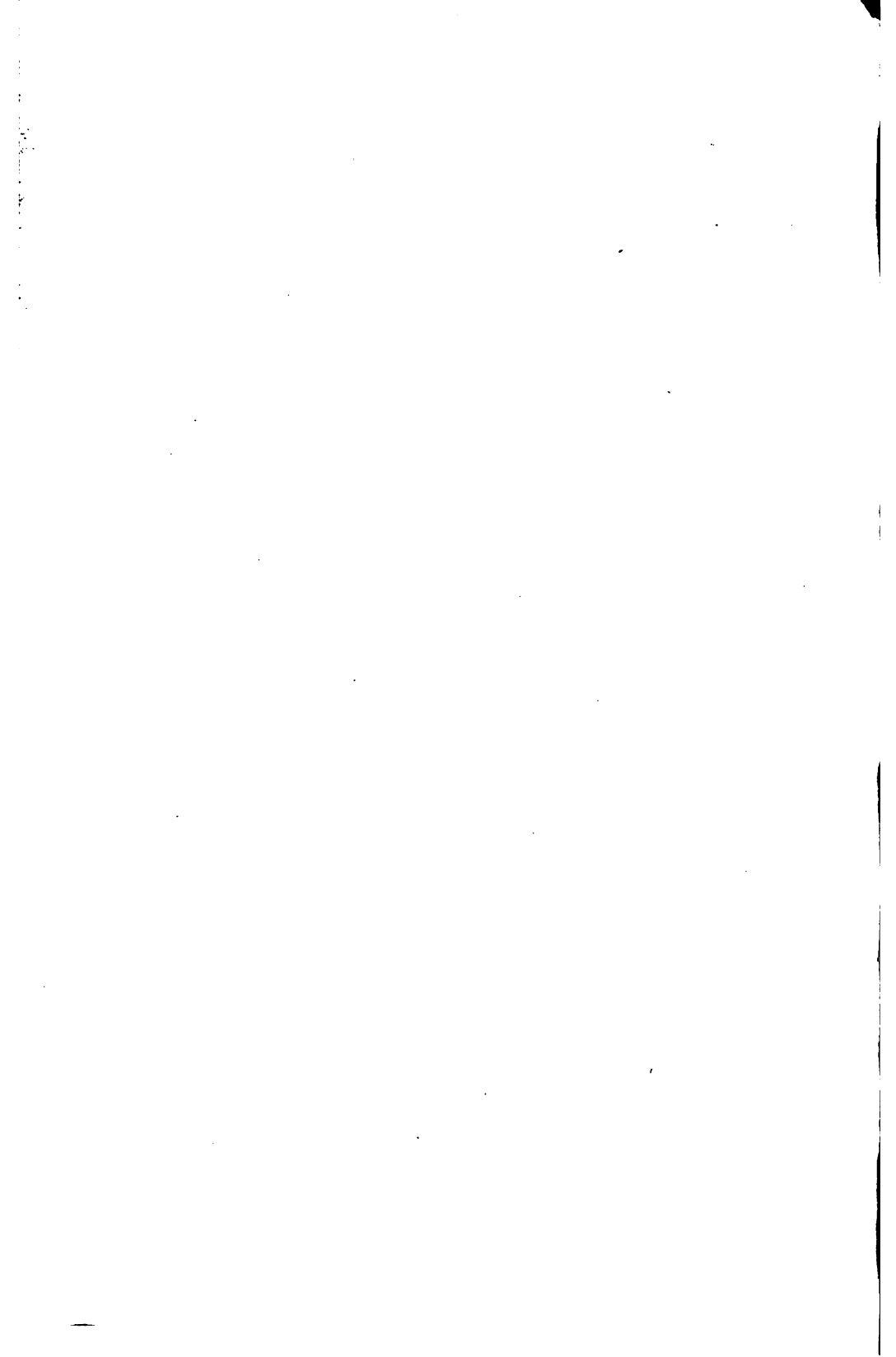
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LATIN
IN SECONDARY SCHOOLS

H. A. BROWN





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A Study of Ability in Latin in Secondary Schools

A DESCRIPTION OF A METHOD OF MEASURING
ABILITY IN LATIN, WITH A STATISTICAL
STUDY OF THE RESULTS OF A
SURVEY OF INSTRUCTION IN
LATIN IN NEW HAMPSHIRE
SECONDARY SCHOOLS

By
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President State Normal School
Oshkosh, Wisconsin

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PREFACE

This investigation was begun when the writer was director of the Bureau of Educational Research connected with the New Hampshire Department of Public Instruction. A preliminary test was given in 1916. Most of the data contained in the present study were gathered near the end of the school year in 1917. The scoring of the papers and the tabulation of the data were done during the summer of that year.

The study was made possible by funds with which to maintain the Bureau, granted by the General Education Board, for the purpose of carrying on scientific studies of educational practice. It should be stated that the General Education Board merely granted to the State Superintendent of Public Instruction the funds for maintaining the Bureau and in no way directed what investigations should be made. The Bureau acted entirely on its own initiative and accepts full responsibility for its findings.

This monograph has been written for two classes of readers. There is a large class of people who are directly and very vitally interested in Latin as it is taught in both secondary school and college. They are mostly school and college teachers and administrators, who desire to know the results of any investigations which throw light upon defects in present methods of teaching Latin, and they are also interested in any suggestions in the direction of improved methods of instruction. Their interest is thus chiefly in the practical side of the investigation. There is also a large class, made up of scientific investigators in education, who are interested not only in the practical results of the investigation, but also in the methods by which the results are secured. They will insist upon a full presentation of the data from which the conclusions were derived. For this reason the data have been presented in as great detail as the limits of the monograph will permit.

This study was undertaken for purely administrative purposes to answer certain questions with reference to the success with which Latin was being taught in the secondary schools of the State as a whole. Therefore, in many cases, a general average gives a sufficient answer. Many tables and graphs which might have been

printed are omitted for this reason. It is believed by the writer that while this may make the monograph less interesting to the scientific investigator, it makes it more readable for the general school administrator. Enough data have been given so that anyone who desires to do so may check the accuracy of the work in every important particular.

I desire to acknowledge here my indebtedness to several people who have assisted me in this study.

To Professor Henry C. Morrison, of the School of Education, University of Chicago, formerly Superintendent of Public Instruction for New Hampshire, I am indebted for valuable suggestions and criticism throughout the entire time during which the investigation has been in progress. The study was made under his general direction.

I am under especial obligation to Miss Margaret G. Kennedy, first assistant in the Bureau of Educational Research, for patient and untiring efforts in giving the tests, for suggestions on the general plan of the study and especially for advice and painstaking labor in connection with the statistical work involved in evaluating the tests and in interpreting the results. Her assistance during the earlier stages of this study was invaluable.

Mrs. Mabel A. Riordan, executive secretary, State Normal School, Oshkosh, Wisconsin, has rendered valuable service during the later stages of this study, especially in the final statement of conclusions.

Professor Truman L. Kelley of Teachers College, Columbia University, has read the manuscript and offered many valuable suggestions. Dr. B. R. Buckingham of the University of Illinois has read a part of the proof. Dr. W. W. Theisen and Dr. Carter Alexander of the Wisconsin State Department of Public Instruction have also read the proof.

I am indebted to the General Education Board for its support of this investigation.

H. A. BROWN.



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CHAPTER I

GENERAL PURPOSE AND NATURE OF THE INVESTIGATION

One of the very important needs in secondary education at the present time is that current practices and methods should be evaluated in a scientific manner. Secondary educational practice in the past has been to a degree a blind, undefined and aimless procedure, and these characteristics still remain in a large measure. Even at the present time the validity of the purposes which control and guide instruction and the choice of subject-matter, in some respects, is doubtful. We still have altogether too vague notions concerning the real reasons why we teach at all such studies as algebra, literature and Latin and not something else in their places. If it were necessary to prove definitely just what specific values in terms of a valid social economy many subjects now in the program contribute, under our present forms of teaching, it would be very difficult to justify their existence or to defend the main objectives which those who teach them have in mind as the chief results to be secured.

Plans for reorganizing the work of the secondary school on a broad scale, both as to content and method, are under discussion.¹ The present type of secondary education is being subjected to vigorous criticism in many quarters on account of its lack of definiteness of aim, the alleged superficiality of much of its work and the non-functioning relationship to life of many things which pupils are required to study. It is on account of this marked tendency at present to examine anew, critically, the whole process of instruction, aims, organization and program-material that it is highly desirable to find out exactly where we stand with regard to efficiency in the

¹ For a detailed discussion and criticism of modern secondary education, see the following, which are good illustrations of the modern critical attitude.

Snedden, David. *New Problems in Secondary Education*, *School Review*, Vol. XXIV, No. 3, pp. 177-187.

Morrison, H. C. *Reconstructed Mathematics in the High School*, *Thirteenth Yearbook of the National Society for the Study of Education*, Part I, pp. 9-31.

Flexner, Abraham. *A Modern School*, *Publications of The General Education Board*, Occasional Paper No. 3.

various subjects. In a word, we need to have very definite knowledge of just the degree to which and the points at which we are succeeding and failing according to our present plans and methods. Only when we have this information can we make a beginning most intelligently in devising new methods of instruction, discarding old subjects and introducing new ones, reorganizing program-content and establishing new aims. It is especially imperative in this scientific age that we should not proceed blindly to throw out a method of instruction which has been in use for a long time merely because we think it is not producing results and replace it by another which we think may be more effective in this direction.

There is an especially great need at the present time of this evaluating process in all of the older school subjects. Do we know in Latin whether the present results are such that there is a need for devising new methods of instruction? Are we sure as to just those particulars in which changes in method are desirable? The answer to these questions is that we have practically no objective evidence but many poorly grounded opinions and beliefs.

PRELIMINARY NATURE OF THE INVESTIGATION

The investigation described in this monograph was entered upon for the purpose of securing some light upon these problems. It pretends to be only a preliminary attempt in a comparatively new field. The method used is crude in some respects from a scientific and statistical point of view and is not intended to be in any sense a final and best way of measuring ability in Latin. The results are admitted to be tentative and provisional. The necessity of getting some reasonably definite information concerning actual results of teaching in this field is so great that it seems better to proceed at once with somewhat imperfect methods, than to delay until an entirely satisfactory technique of measurement has been developed. It is believed that the most rapid progress can be made in working out final and valid methods of measurement by gaining as wide experience as possible with such crude plans as can be devised at the present time provided, of course, that they give reliable results. It is felt that the method herein described is accurate enough to be very serviceable and to furnish information of great value.

CHAPTER II

SPECIFIC PURPOSES OF THE INVESTIGATION

The general purpose of this investigation, as previously stated, was to test and evaluate present aims, methods and practices in connection with the teaching of Latin in secondary schools. In addition to this general aim, a number of detailed and specific problems presented themselves for solution. Before proceeding to a description of the test and a discussion of the results, a statement of these particular problems should be made. Among the most important the following may be mentioned.

(1) *It is very desirable to know exactly to what extent the schools are now succeeding in teaching a mastery of the Latin language.* Do pupils acquire a competent reading knowledge of Latin at the end of four years of instruction? Is there any objective evidence that high school boys and girls acquire a genuine appreciation of the literature of the language in the original or that they are capable of doing so? Do they master the common aspects of Latin grammar? Are the schools securing real results along these lines or only a smattering?

(2) *What is the best method by which to teach Latin?* There are in the State a good many different kinds of procedure. In two schools the direct method was in use for several years in the first-year work. In others the so-called grammatical method is the basis of instruction, with variations in emphasis upon different aspects of the work in various localities. Several schools are using a method to be described later which has been called the translation method. How do the results by these different methods compare? If some are in a marked degree superior to others, that fact needs to be made known. What are the chief factors in method which produce efficiency? Is method of any particular importance or does ability on the part of pupils depend upon something entirely different? If so, upon what?

(3) *What is the relation of knowledge of grammar and vocabulary to ability to translate Latin?* What correlations are there between these abilities? What do they signify? Are the pupils who

have been thoroughly drilled in Latin grammar in a formal way superior in speed and accuracy in getting the thought of Latin?

(4) *The method by which knowledge of construction may be acquired best is important.* In some schools a great deal of time is spent on formal study of grammar, discussion of facts of linguistic construction and syntactical analysis of the texts studied. In other schools very little of this is done. Do the classes in which this large amount of time is given to grammatical study show any greater superiority in knowledge of construction than those in which much less or indeed very little time is devoted to it?

(5) *Ability in Latin in relation to the time devoted to the subject has been too long neglected.* Some schools require nearly twice as much time to be spent by pupils in the study of Latin as do others. How do the efficiencies of these different classes compare? Is there any waste of effort here? What time allotment in each year is sufficient to secure satisfactory results?

(6) *Units of measurement, standard tests and norms of ability are needed in Latin.* These have been devised in considerable numbers for certain subjects but up to the present time only a beginning has been made in Latin. This is a subject in which it ought not to be difficult, eventually, to develop adequate means of measurement which may be applied by school administrators as a part of modern scientific school supervision. In view of this fact, the slow progress which has been made along this line is more to be deplored. An important purpose of the present investigation is to secure data with which to make a beginning in the establishment of norms of ability in Latin. It is impossible to judge our present efficiency in Latin except in terms of some such definite, objective standards. We need to find out what results are being obtained and what should be attained. We shall have to know what results are possible of attainment under normal conditions. With this knowledge and only with it, can we decide what a satisfactory product is in any school.

(7) *Are present purposes and aims in the teaching of Latin valid?* We shall first need to find out what aims now control the teaching. The question then will be, Are they valid aims? If not, what should be the main objectives of four or five years of time

spent in the study of Latin by pupils, the teaching effort devoted to the subject and the money expended by the community? A complete study of this aspect of the problem will not be undertaken. Certain obvious aspects of it only will be discussed.

All of these and many other similar matters are exceedingly important questions and they await the light which experimental investigation can throw upon them. It has been possible up to the present time to answer them only in terms of opinion which has small scientific value. It has not been possible in this study to answer all of these questions.

LIMITATIONS OF PURPOSE OF THIS STUDY

It should be understood distinctly by the reader of this monograph that the purpose of this study was to investigate only certain aspects of the work in Latin. It should be borne clearly in mind that it was no part of the aim to determine the educational value of Latin, its place in the curriculum or whether it should be in the course of study at all, the best time to begin the study of Latin or problems of that sort. The purpose of this study was primarily to determine the efficiency of the work in Latin in the secondary schools of a single State under present methods of instruction.

CHAPTER III

THE TESTS AND THEIR APPLICATION

GENERAL PLAN OF THE TESTS

In connection with any test the question which arises at the outset is, What abilities need to be measured in order to make known the complete amount, degree, or extent of ability possessed by an individual or a group of individuals? We have our problem then in the form of the question, What specific abilities in Latin must be measured in order to furnish adequate information about a pupil's total ability? A second question of considerable importance is, To what extent are these abilities measurable?

In reading English it is easy to see that important things to know, which are easily measurable, are the amount which can be read in a given unit of time and the degree of comprehension of the reader. Any plan which will give reasonably accurate information along these two lines will prove of great practical value in establishing norms of ability, evaluating methods and diagnosing class and individual needs. In Latin it seems evident that the speed and correctness with which an individual is able to get thought from a passage of the language is one important measure of his ability. In this investigation it is assumed to be true that the person who can get the largest amount of thought, and get it most correctly, from a given selection of Latin in a unit of time, is the most efficient regardless of excellencies or deficiencies in other minor particulars. Is not this the end for which Latin is taught? Other aspects of Latin to which a good deal of time is given in teaching are construction and vocabulary, but they are of secondary importance as aspects for measurement. They are sufficiently important, however, to deserve attention. Probably these three abilities are the most fundamental. Several different tests were used in measuring the pupils' ability. They are described below.

CONNECTED LATIN TEST

The test which was used as a connected Latin test in this investigation consisted of a rather easy passage of Latin. It presented

no particular difficulties of vocabulary, construction or thought, which ought to be at all troublesome to pupils who have studied the subject two years. The pupils were given a certain specified time in which to get and write as much of the thought of the Latin as possible. They were scored on the amount which they could write in English in the given time.

This test was given to 1,160 pupils, of whom 582 had studied Latin two years, 317 three years and 261 four years.

WHAT THE TEST MEASURED

The test was designed to measure the pupils' ability to react to the total situation presented by a connected passage of Latin. It determined their ability to interpret the meaning of the Latin and express it in writing. It was thought that this kind of a test might be better than a scale in the form of a series of isolated sentences of increasing difficulty. According to the writer's understanding of the term, to read means carrying the thread of a story or argument to a climax or conclusion, understanding its meaning and grasping the significance of the whole. It involves interpreting a passage of discourse in terms of its thought content. In the absence of evidence there was the possibility that the ability required to react in this way to a connected passage might be something quite different from that required to give the thought of a series of isolated sentences which, when thus detached from their settings, are more or less meaningless. In any case, it was thought desirable to try both plans. Therefore it was decided to devise also a Latin test consisting of a series of isolated sentences of increasing difficulty. The latter is somewhat easier to score and if it is as adequate a test of ability to interpret the meaning of Latin discourse, that fact should be known. It was held that it might be entirely possible that the ability to read as defined above may be measured indirectly by a Latin sentence test in an entirely satisfactory manner just as temperature is measured indirectly by the height of a column of mercury which varies as the temperature varies. This was one of the important problems connected with this study. No preconceived notions were entertained but tests were devised to find the facts. The results are discussed later in this bulletin.

LATIN SENTENCE TESTS

The Latin Sentence Tests consisted of a series of Latin sentences, the first of which was very easy and the others of which were increasingly more difficult. The first few sentences were so easy that it was expected that pupils who had studied Latin a few weeks would be likely to succeed with them. The most difficult sentences were thought to be such that only exceptional pupils who had had Latin in secondary schools at least four years could deal with them successfully. A plan was adopted for evaluating the sentences so as to have them range by about equal steps of difficulty from the easiest to the most difficult.

It was found when the test was first given in the schools that it did not fulfill all of the expectations. It was discovered at once that there were not enough easy sentences. The test as originally arranged consisted of twenty sentences. When the defect noted above was discovered, ten easier sentences were added. The test as composed of the twenty sentences originally chosen was called Test B and that consisting of the final thirty sentences was called Test A. Test A was given to 813 pupils divided as follows: first year, 371; second year, 233; third year, 104; fourth year, 105. Test B was taken by 2,160 pupils, of whom 942 were in the first year, 598 in the second, 347 in the third and 273 in the fourth. Both tests are given on a following page. The tests were so printed that the pupils could write the translation of each sentence directly under it. Time enough was allowed so that each pupil could do all that he was able to translate before he had to cease work. The time allowed on Test A was forty minutes and on Test B thirty. It was found by actual experience that this time was sufficient to allow a pupil to do all that he was able to translate.

THE LATIN GRAMMAR TEST

A Latin Grammar Test was given to 1,974 pupils, of whom 715 had studied Latin one year, 591 two years, 364 three years and 304 four years. This, in a word, measured the pupils' ability to name and describe Latin constructions. The test appears on a later page.

It is believed that to be able to name and describe Latin constructions in a formal sense may be a very different thing from abil-

ity to react correctly to constructions in translation. It happens many times that a pupil can translate correctly a given construction whenever he meets it in its functional relationship in a sentence and yet be very ignorant with respect to such formal knowledge concerning it as would be necessary in naming and describing it. For that reason it is very desirable that a functional grammar test should be devised. This functional grammar test should measure the success of the pupils in reacting to certain grammatical constructions in the material which they have to translate. It is assumed by the writer, in the absence of evidence to the contrary, that this formal knowledge of grammar may bear little relation to functional knowledge. Although attempts were made, a satisfactory test of functional knowledge of grammar was not devised.

THE LATIN VOCABULARY TEST

The Latin Vocabulary Test was given to 841 pupils, of whom 509 had had one year of Latin, 211 two years, 117 three years and 104 four years.

All that has been said concerning formal and functional grammar tests applies with equal force to vocabulary. It is believed that there may be a great difference between the ability to give one correct meaning of a word, when a list of the words is given, and the ability to react correctly to a word in a sentence, i. e., to give a meaning which is proper in the particular context. No satisfactory test for functional knowledge of vocabulary was constructed, although several attempts were made.

INFORMATION SECURED FROM SCHOOLS

Detailed information, as called for on the form below, was collected from each school:

LATIN REPORT

.....

.....

.....

Dear.....

Certain information concerning the work in Latin in.....

.....is asked for below. It will be a service to this Bureau, which will be greatly appreciated, if you or your Latin teacher will furnish the information and return this folder at once. A stamped envelope is enclosed.

Town or City..... Date of Test.....
 School..... Latin Teacher.....

		Numerals below indicate years of Latin study: I, first year pupils; II, second year pupils, and so on.				
		I	II	III	IV	V
1.	Total number of minutes per week of class work in Latin, on the part of pupils, in each class..... (Put answers under right numerals to indicate the proper year in school.)	...	...	...	...	...
2.	Number of minutes per week devoted to study of Latin, by pupils in each class, outside of class period, in school or out .....	...	...	...	...	...
3.	Pages of translation of connected Latin during the present year by pupils in each class.....	...	...	...	...	...
4.	Average size of Latin classes in each year .....	...	...	...	...	...
(Divisions taught by one teacher.)						
5.	To what extent is sight translation a part of your method? (This question may be answered by stating the proportion of all the translation which is at sight.).....					
6.	Which of the methods named below corresponds most closely to that which you use? (Answer as indicated below.) I use method A, B, C (cross out two) in the first year. I use method I, II, III (cross out two) in the years above the first.					

METHOD IN FIRST YEAR:

A. *Direct method.* No systematic study of grammar during the year. Grammatical principles learned incidentally through use of the language in conversation or in translation or reading. No study of beginners' book containing grammar lessons. Translation, reading and conversation are learned from the beginning in a functional way by practice on material adapted to the stage of progress of the pupils.

B. *Translation method.* No systematic study of grammar from a book. Daily translation of sentences from blackboard. Grammatical constructions

taught concretely in sentences. Grammar learned incidentally through extensive translation. Easy translation from books begun soon after the beginning of the year and continued throughout the year. No regular and systematic study of a beginners' book.

C. *Grammatical method.* Study and completion during the year of a beginners' book which contains a systematic presentation of the principles of grammar together with Latin sentences to translate and English sentences to write in Latin. This book is the basis of the year's work.

METHOD IN YEARS ABOVE THE FIRST:

I. No systematic study of grammar except as principles are explained to the extent needed to understand the meaning of the language,—when met in translation,—or learned incidentally by reacting to them frequently in translation. No systematic study of grammar in connection with prose composition, to the extent of assigning lessons to be studied in a text on grammar.

II. Grammar studied in connection with prose composition once a week or the equivalent. Grammar references assigned to be studied and recited in connection with the prose lessons. No direct attention given to grammar except in connection with prose composition.

III. Systematic study of grammar both in connection with prose composition and the Latin texts studied in class. Regular grammar lessons assigned for study and recitation. Constant attention to principles of syntax in the texts studied, by questions on the constructions met and otherwise.

7. Has this same method been in use during the period that the highest class now studying Latin has been in school?.....If not, describe the method by which the classes tested have been taught in each year. Please give a rather complete statement.
8. If the method used does not correspond closely to any of the above, give on the space below a detailed description of your method.
9. Is there any study of grammar after the first year?.....
If so, by what method and to what extent?
(Please make a rather complete statement here.)
10. Do you make use of perception-card drill on words or groups of words?..... If so, where in the course and to what extent?
11. Do you require the writing of English sentences in Latin during the first year?..... To what extent?
12. To what extent, and how, is prose composition taught above the first year?
13. Do you give regular tests in Latin?.....If so, please describe their nature and state the extent to which they have been given.
14. Describe any other significant aspects of your method which are not covered by the above questions.

Name of person making this report:.....

Address—Town or city:.....

Street: State:

Each pupil was asked to put the following information on the back of each test paper:

To be filled out by pupils:

Name..... Date.....
 City or town..... State.....
 School..... Class.....
 Age: years..... months.....
 This is my..... year of Latin study.

Schools in which I have studied Latin each year:

I.....
 II.....
 III.....
 IV.....

Names of Latin teachers in each year:

I.....
 II.....
 III.....
 IV.....

Every school has been visited one or more times by the writer or by some other member of the State Department of Public Instruction, and the methods of teaching in use have been studied critically and other information has been secured through correspondence.¹

¹ Previous to taking up the directorship of the Bureau of Educational Research, the writer served as Deputy Superintendent of Public Instruction for the State of New Hampshire, and devoted his attention chiefly to secondary school inspection, in which a survey was made of the instructional aspects of the work of these schools and a large amount of significant material was accumulated in the form of several large volumes of typewritten reports. For example three weeks were spent studying the work of one high school, a week making a detailed survey of another, and so on. The work in Latin in nearly all of the schools involved in this investigation, therefore, had already been studied thoroughly before the test was given. Two other Deputy Superintendents, for four years, were engaged in the same sort of inspection and reporting, in connection with the work of the secondary schools, and the writer had free access to their reports and numerous conferences with them. The State Superintendent of Public Instruction had been in very close touch with the secondary schools for more than a decade and has contributed invaluable information concerning the history of the work in Latin in each school. For these reasons, the Bureau has been able to have at its disposal unusually complete and accurate knowledge concerning the instruction in Latin in the State.

CHAPTER IV

DEVELOPMENT OF THE TESTS

In the following discussion only a very brief treatment of the theory underlying the statistical method applied in the derivation of the scale values of these tests has been given. Anyone who is not particularly interested in the theory of the matter may pass over this chapter.

THEORY OF SCALE DERIVATION¹

The discussion of the method of developing the tests and the theory which underlies it is based on Latin Sentence Test B. This was given to the greatest number of pupils. This is hardly large enough on which to base the evaluation of a scale, but on the other hand, it is believed that the final scale values secured are very much more accurate than any mere arbitrary approximations which could be adopted.

The method used in developing and evaluating the tests is the now familiar method used by Thorndike, Buckingham, Henmon, Trabue, Woody, and others. To any one who is familiar with their methods our indebtedness to them will be apparent on every page of this chapter. Since the theory on which the evaluation of the tests

¹ For a complete discussion of the theory referred to in this chapter see the following:

Woody, Clifford. *Measurements of Some Achievements in Arithmetic*. Bureau of Publications, Teachers College, Columbia University, New York City.

Trabue, M. R. *Completion Test Language Scales*. Bureau of Publications, Teachers College, Columbia University.

Buckingham, B. R. *Spelling Ability: Its Measurement and Distribution*. Bureau of Publications, Teachers College, Columbia University.

Thorndike, E. L. *Introduction to the Theory of Mental and Social Measurements*. Bureau of Publications, Teachers College, Columbia University.

Henmon, V. A. C. *The Measurement of Ability in Latin*. *Journal of Educational Psychology*, Vol. VIII, pp. 515-538 and pp. 589-599.

Van Wagenen, M. J. *Historical Information and Judgment in Pupils in the Elementary School*. Bureau of Publications, Teachers College, Columbia University.

is based is discussed so thoroughly in their writings and elsewhere, only so much of it will be given here as is necessary for an understanding of its application to the problem of developing these Latin tests and scales. With so many almost identical developments of the same theory in print, one would be hardly justified in giving an extensive description of the method. Therefore, this chapter is confessedly sketchy.

The method which has been used in evaluating these tests is based upon three assumptions. The first of these is that that is difficult upon which a large number of pupils fail and easy upon which a large number succeed. It is assumed, also, that ability in Latin is distributed according to the normal probability curve. The third assumption is that the variability in Latin ability is the same in each of the four high school years. For any further discussion of these three assumptions the reader is referred to the studies mentioned in the footnote on the previous page.

The unit of measure used in connection with these tests was the probable error or median deviation, as it is commonly called. The probable error has been defined as follows: "It is an amount of ability above or below the median such as to include half the total number of ratings. In a normal distribution, if we arrange all of the participants in the order of their ratings, and if we count from the beginning one quarter of the way and three quarters of the way, half the difference between the measures which we reach is the probable error."

In a normal distribution surface, if a perpendicular is so drawn that on each side of it are found fifty per cent of the cases, the point at which this perpendicular intersects the base line of the surface of frequency is the median point. If perpendiculars are erected on each side of the median at such distances that between the median and each of the perpendiculars just twenty-five per cent of the surface is included between the median ordinate and each of the other two ordinates, the distance along the base line from the median to either ordinate is the probable error distance. This gives us a very convenient measure for scaling our Latin sentences or words or constructions.

Of course it is understood that the base line of the normal distribution surface and the curve are asymptotic and theoretically

never meet. It is customary in studies of this kind to assume that they meet at some convenient distance from the median. In this study it is assumed that they meet at 4.6 P. E.

TABLE 1

ABILITY TO TRANSLATE LATIN SENTENCES

LATIN SENTENCE TEST B

Distribution Table for Number of Sentences Translated Correctly

Number of Sentences	Number of Pupils			
	Year I	Year II	Year III	Year IV
0	50	13	2	...
1	449	60	15	9
2	278	132	32	23
3	86	121	49	25
4	48	98	45	31
5	15	55	46	38
6	5	47	47	33
7	7	23	44	23
8	2	15	21	23
9 .....	...	6	18	19
10	1	9	9	19
11 .....	...	7	9	3
12	1	5	3	8
13 .....	...	1	3	9
14 .....	...	3	1	4
15 .....	...	2	1	5
16 .....	...	1	2	1
17 .....	...	...	...	...
18 .....	...	...	...	...
19 .....	...	...	...	...
20 .....	...	...	...	...
Number of Pupils Tested.....	942	598	347	273
Median Number of Sentences				
Translated Correctly	1.938	3.777	5.663	6.318
25 Percentile	1.413	2.580	3.770	4.363
75 Percentile	2.746	5.445	7.551	8.989
Quartile .....	.667	1.433	1.440	2.313

From the above it is seen that any Latin sentence may be located at a point on the base line of the surface of frequency. The point at which it is located will indicate its degree of difficulty. All measures of the difficulty of sentences will be expressed in terms of P.

E. All distances are measured to the right or left from the median. Distances to the left are negative and those to the right are positive. A sentence which was translated correctly by ninety-five per cent of the pupils would be located on the easy end of the scale and near the end. On the other hand, a sentence translated correctly

TABLE 2
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
 Number of Pupils in Each Year Who Translated Each
 Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	539	312	208	148
2	237	305	217	156
3	58	191	162	141
4	40	149	119	104
5	48	147	127	89
6	27	117	101	65
7	1	49	92	58
8	1	28	65	57
9	0	19	42	50
10	3	25	35	37
11	1	24	33	30
12	11	11	24	31
13	2	4	4	88
14	1	8	23	35
15	0	10	21	30
16	1	17	21	20
17	0	5	14	8
18	0	3	14	8
19	0	0	2	11
20	0	0	1	3

by only five per cent of the pupils would be on the difficult end of the scale. In a word, each sentence would be located at such a point on the base line that the percentage of the surface at the right of an ordinate erected at the point in question would be equal to the percentage of the pupils who translated the sentence correctly. Thus a sentence translated by seventy-five per cent of the pupils would be located at -1 P. E. A sentence translated correctly by twenty-five per cent of the pupils would be at $+1$ P. E. These distances

are expressed as distances from the median. The sentence which is located at -1 P. E. would be at that distance below the median and the one located at $+1$ P. E. would be at that distance above the median. In finding the scale value of a sentence it is necessary to know the per cent of deviation from the median of the per cent

TABLE 3
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
 Per Cent of Pupils in Each Year Who Translated Each
 Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	57.2	52.2	59.9	54.2
2	25.2	51.0	62.6	57.1
3	6.2	31.9	46.7	51.6
4	4.2	24.9	34.3	38.1
5	5.1	24.6	36.6	32.6
6	2.9	19.6	29.1	23.8
7	0.1	8.0	26.5	21.2
8	0.1	4.7	18.7	20.9
9 .....	...	3.2	12.1	18.3
10	0.3	4.2	10.1	13.6
11	0.1	4.0	9.5	11.0
12	1.2	1.8	6.9	11.4
13	0.2	0.7	1.2	25.4
14	0.1	1.3	6.6	12.8
15 .....	...	1.7	6.1	11.0
16	0.1	2.8	6.1	7.3
17 .....	...	0.8	4.0	2.9
18 .....	...	0.5	4.0	2.9
19 .....	...	...	0.6	4.0
20 .....	...	...	0.3	1.1

of pupils who translated the sentence correctly. In Table 1 is given a distribution of the number of sentences translated correctly in each year, and in Table 2 the number of pupils translating each of the sentences is given. Table 3 gives the per cent of pupils in each year who translated each of these sentences correctly, Table 4 the difference between fifty per cent and the per cent of pupils in each year who translated each sentence correctly, Table 5 the P. E. equivalents of the difference between fifty per cent and the per cent in each year

who translated each sentence correctly. These P. E. equivalents have been obtained directly from a conversion table. These P. E. values indicate the location of each sentence on the base line of the normal probability surface above or below the median. It will be noticed that the sentences do not have the same location, with ref-

TABLE 4

ABILITY TO TRANSLATE LATIN SENTENCES

LATIN SENTENCE TEST B

Difference Between Fifty Per Cent and the Per Cent of Pupils in Each Year Who Translated Each Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	7.2	2.2	9.9	4.2
2	-24.8	1.0	12.6	7.1
3	-43.8	-18.1	- 3.3	1.6
4	-45.8	-25.1	-15.1	-11.9
5	-44.9	-25.4	-13.4	-17.4
6	-47.1	-30.4	-20.9	-26.2
7	-49.9	-42.0	-23.5	-28.8
8	-49.9	-45.3	-31.3	-29.1
9 .....	...	-46.8	-37.9	-31.7
10	-49.7	-45.8	-39.9	-36.4
11	-49.9	-46.0	-40.5	-39.0
12	-48.8	-48.2	-43.1	-38.6
13	-49.8	-49.3	-48.8	-24.6
14	-49.9	-48.7	-43.4	-37.2
15 .....	...	-48.3	-43.9	-39.0
16	-49.9	-47.2	-43.9	-42.7
17 .....	...	-49.2	-46.0	-47.1
18 .....	...	-49.5	-46.0	-47.1
19 .....	...	...	-49.4	-46.0
20 .....	...	...	-49.7	-48.9

erence to the median, for each year, but have different scale values for the different years.

The next problem, then, is to develop a general scale with a scale value for each sentence which will deviate as little as possible from the values for each of the years. In order to do this, two things must be known: (1) the distance between the consecutive year medians; (2) and the location of a common zero point.

In measuring the distance between the year medians a number of different values are sometimes secured. The averages of these, with certain of them weighted, have been taken usually as the intervals between the various years.

(1) One measure of the year interval is usually found by determining the difference in the position of each sentence in relation to

TABLE 5
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B

P. E. Equivalents of the Difference Between Fifty Per Cent and the Per Cent in Each Year Who Translated Each Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	—0.269	—0.082	—0.372	—0.156
2	0.991	—0.037	—0.476	—0.265
3	2.281	0.698	0.123	—0.059
4	2.562	1.005	0.600 ^{0.4}	0.449
5	2.425	1.019	0.508	0.669
6	2.811	1.269	0.816	1.057
7	4.600	2.083	0.931	1.186
8	4.600	2.483	1.318	1.201
9 .....	....	2.746	1.735	1.340
10	4.083	2.562	1.892	1.629
11	4.600	2.597	1.944	1.819
12	3.346	3.111	2.199	1.788
13	4.275	3.643	3.346	0.982
14	4.600	3.300	2.234	1.685
15 .....	....	3.146	2.293	1.819
16	4.600	2.834	2.293	2.155
17 .....	....	3.571	2.597	2.811
18 .....	....	3.820	2.597	2.811
19 .....	....	....	3.275	2.597
20 .....	....	....	4.083	3.395

the medians of two consecutive years. By way of illustration, if we refer to Table 5, we find that the first sentence is situated .269 P. E. below the median of Year I and .082 P. E. below the median of Year II. We have here a difference of .187 P. E. Table 6 gives these differences for the various sentences. The average of all the differences for the interval between Year I and Year II gives one

measure of the interval between these years. This is called the composite average.

(2) Another measure of the interval between the years has often been obtained by the so-called quartile method. "If we have a normal surface of distribution.....the quartile of any distribution should be equal to the P. E. of that distribution. There-

TABLE 6
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
P. E. Intervals Shown Between Consecutive Years in the Case of
Each Sentence

Sentence	Interval I-II	Interval II-III	Interval III-IV
1	-0.187	0.290	-0.216
2	1.028	0.439	-0.211
3	1.583	0.575	0.182
4	1.557	0.405	0.151
5	1.406	0.511	0.161
6	1.542	0.453	0.241
7	2.517	1.152	0.255
8	2.117	1.165	0.117
9 .....	....	1.011	0.395
10	1.521	0.670	0.263
11	2.003	0.653	0.125
12	0.235	0.912	0.411
13	0.632	0.297	2.364
14	1.300	0.166 1.066	0.549
15 .....	....	0.853	0.474
16	1.766	0.541	0.138
17 .....	....	0.974	0.214
18 .....	....	1.223	0.214
19 .....	....	....	1.128
20 .....	....	....	0.688

fore, if we divide the quartile of a distribution into the crude score intervals, we will get the interval between the medians of the grades [in this study the years] in terms of P. E. Since for each interval between the grades [years] there are two quartile measures, the average of the two quartiles is used as a divisor of the crude score interval between the grades [years]."

(3) A third method, commonly called the distribution method, is in common use for determining the intervals between the medians of the different years. This is based on the overlapping of the year distributions. There are pupils in every year who equal or exceed the medians of several of the next higher years and it is true, also, that some pupils in a given year will fail to reach the median achievement of the years below.

None of these three methods was found well adapted to this test. The measure of the distance between the consecutive year medians which has been used in this study is that obtained by the so-called sentence method. The measures of the intervals obtained from the select group only have been used. That is, as a measure of the intervals between the years, use has been made of the average of those determinations only which come from values between -2 P. E. and $+3$ P. E. in Table 5. The reason for this may need explanation. The easy sentences should not have as great weight as the more difficult in determining the intervals between the years. Since the distributions for Years I and II have long tails, the percentages lying between the medians of Years II, III, and IV do not differ by amounts as large as would be the case with normal distributions. This results in values which are too small in the case of the lower indirect and the upper indirect determinations of the intervals between years obtained from overlapping of distributions. This skewness may be attributed to the difficulties of the particular sentences given and not to a real skewness in ability, so that the values in question are genuinely too small to represent the true situation. As a further reason, the uneven difficulty of certain of the sentences for the different years would seem to make it desirable to use the intervals obtained by the sentence method with values from the select group only. The sentence method of determining intervals assumes a normal distribution for the talent of pupils, but it does not assume that the scores on a particular test follow a normal distribution. The quartile method assumes this latter fact, as well as the former, and the overlapping method is not entirely free from the particular combination of difficulties found in this test. For these reasons the sentence method with values obtained from the select group only is held to be the soundest method.

The measures of the intervals between the consecutive year medians obtained by the sentence method with only select group values taken are as follows:

Interval	Interval	Interval
I-II	II-III	III-IV
1.155	.655	.204

One more step must be taken before we can determine our scale values. We must locate a zero point in order to be able to know just how much more difficult one sentence is than another. The method of determining the zero point is as follows.

It was found by the data which are set forth in Table I that 44.71 per cent of the pupils of Year I are between those who did not succeed in translating one sentence correctly and the median for that year. By transmuting this per cent into terms of P. E. we have 2.397 P. E. This means that the median of Year I is 2.397 above zero. In the same way we find that 47.8 per cent of the pupils in Year II are between those who did not translate any sentences correctly and the median of Year II. This means that the median of Year II is 2.986 P. E. above zero. We already know that the median of Year II is 1.155 P. E. above that of Year I. If now we subtract the distance that the median of Year II is above Year I from the distance that the median of Year II is above zero, we find how far the median of Year I is above zero. This gives us 1.831 P. E. The zero referred to here is of course the arbitrary zero. It should be explained that the arbitrary zero is very different from the absolute zero, which means just not any ability at all in the thing in question. A pupil who fails to get any of the sentences of this test right does not necessarily have zero ability in Latin in the absolute sense. The arbitrary zero point as used here means the inability to translate correctly a single sentence under the particular conditions connected with the test.¹

Now it will be remembered that in a normal distribution the P. E. and the quartile are equal. If we divide the median of Year I by the quartile we shall have another measure of the distance that the median of Year I is above zero. This is found to be 2.906 P. E. By dividing the median of Year II by the quartile of the same year

¹ For a complete discussion of this idea see Thorndike's *Introduction to Mental and Social Measurements*, p. 16 ff.

we get a measure of the distance that the median of Year II is above zero. Then, if we subtract the distance that the median of Year II is above the median of Year I from the distance that the median of Year II is above zero we get the distance of the median of Year I above zero. This is found to be 1.481 P. E.

If we take the average of the above four determinations we shall have a satisfactory measure of the distance of the arbitrary zero point below the median of Year I.

The four determinations are as follows, with their average:

From the distribution of Year I.....2.397

From the distribution of Year II.....1.831

From the achievement of Year I.....2.906

From the achievement of Year II.....1.481

Average.....2.154

Thus, from the above, we know that the distance of the arbitrary zero point is 2.154 P. E. below the median of Year I.

Since we have the determination of the distance of the median of Year I above the arbitrary zero point, it is an easy matter to find how far above zero the medians of each of the other years are. This is given in Table 7.

TABLE 7
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Distance of the Median of Each Year Above Zero.

Year	Above Zero	Below Next Year
I	2.154	1.155
II	3.309	0.655
III	3.964	0.204
IV	4.168	....

We already know the P. E. values of each sentence for each year from Table 5. We need now to refer all of these to the zero point in order to get a general value for each. In finding the location above zero of each sentence it is necessary to add to or subtract from the values given in Table 5 appropriate values from Table 7. To illustrate, the first sentence in Table 5, Year II, has

a value of $-.082$. Table 7 shows that the median of Year II is 3.309 P. E. above zero. If now we subtract $.082$ from 3.309 we shall have 3.227, which is the distance above zero of the first sentence. By this procedure all the values in the column for Year II in Table 8 have been obtained. By a similar method those for the other col-

TABLE 8
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B

Sentence	Location Above Zero of Each Sentence			
	<i>2.134</i> Year I	<i>3.309</i> Year II	<i>3.964</i> Year III	<i>4.182</i> Year IV
1	1.885	3.227	3.592	4.012
2	3.145	3.272	3.488	3.903
3	4.435	4.007	4.087	4.109
4	4.716	4.314	4.564	4.719
5	4.579	4.328	4.472	4.837
6	4.965	4.578	4.780	5.225
7	6.754 _v	5.392	4.895	5.354
8	6.754 _v	5.792	5.282	5.369
9 .....	....	6.055	5.699	5.508
10	6.237 _v	5.871	5.856	5.797
11	6.754 _v	5.906	5.908	5.987
12	5.500	6.420	6.163	5.956
13	6.429 _v	6.952	7.310	5.150
14	6.754 _v	6.609	6.198	5.853
15 .....	....	6.455	6.257	5.987
16	6.754 _v	6.143	6.257	6.323
17 .....	....	6.880	6.561	6.979
18 .....	....	7.129	6.561	6.979
19 .....	....	....	7.689	6.765
20 .....	....	....	8.047	7.563

umns have been determined. If the values in Table 5 are positive, we add instead of subtracting.

From the data of Table 8 it is now possible to determine the final scale values of our sentences. In previous studies by this statistical method it has been customary to weight certain of the values in Table 8. The reason for doing this is that it has been felt "that those values which come from those distributions where the median achievements were farthest from the location of the problem [sentence] should have little or no weight." Following

this practice, values in Table 8 have been given double weight when the sentence is less than 1 P. E. from the median achievement of that year and single weight if it is more than 1 P. E. but not more than 4 P. E. If it is more than 4 P. E. distance from the median achievement of that distribution, it is disregarded. The

TABLE 9
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Final Scale Values

Sentence	Scale Value	Sentence	Scale Value
1	3.18	11	5.93
2	3.45	12	6.01
3	4.12	13	6.14
4	4.27	14	6.22
5	4.59	15	6.23
6	4.87	16	6.24
7	5.13	17	6.81
8	5.49	18	6.89
9	5.75	19	7.23
10	5.84	20	7.56

average of those that are not disregarded is taken as the final scale values of the sentence.

These are given in Table 9.

For the other tests only the scale values are given, together with enough of the basic tables to enable anyone who desires to check the accuracy of the work to reconstruct all of the tables.

CHAPTER V

THE LATIN SENTENCE TESTS

NATURE OF THE TESTS

The Latin sentence tests consisted of Test A and Test B as previously noted. These are both made up of a series of sentences of known difficulty, ranging from easy to difficult. The use of Test B is not advised for pupils who have studied Latin but one year, for

TABLE 10
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Average Scores by Schools
YEAR I

School	Average Score	School	Average Score
1	2.03	2	3.42
26	2.35	14	3.25
6	2.76	21	3.05
19	3.02	22	3.38
7	2.87	10	3.94
27	3.06	33	3.50
3	3.23	13	3.51
12	3.00	23	3.51
16	3.76	11	3.41
4	4.61	32	3.63
9	3.20	29	3.63
18	3.32	34	3.70
24	3.24	5	3.83
17	3.41	8	4.09
31	3.44	20	4.11

the reason that it is clearly too difficult for first year pupils. When only upper class pupils are to be tested, it will be found serviceable.

METHOD OF SCORING

In scoring these sentence tests the pupil's mark is the scale value of the hardest sentence translated correctly. Thus if a pupil translated correctly all of the first ten sentences, his score is the scale

value of the tenth sentence. The pupil is, however, given credit for any sentences that he may do beyond the point at which he ceased to translate continuously. For example, if the pupil translated correctly all of the first ten sentences and then translated correctly the thirteenth and fourteenth, his score would be the scale value of the twelfth sentence. There are sound arguments for claiming that this is a fair method of scoring.

LATIN SENTENCE TEST B

1. Puella est parva.
2. Est copia frumenti in agris nostris.
3. Hoc facto, pueri discesserunt.
4. Eis militibus fuerunt scuta gladiique.
5. Dixit aedificium in quo Hannibal esset multos exitus habere.
6. Postero die collem fossa trium milium passuum munivimus.
7. Helvetii existimabant eam civitatem quae nuper pacata esset non bono animo esse.
8. Ante noctem statuendum est quid faciendum sit.
9. Cum Helvetii bello clarissimi essent, Caesar iter per provinciam dare recusavit.
10. Hoc iter tanto difficilior est ut melius sit alterum temptare.
11. Postridie pugnandi causa itinere converso nostros sequi coeperunt.
12. Multi Servium imperio prohibere cupiunt.
13. Quinque cohortes castris praesidio relinquit.
14. Priusquam pugnemus, arti militari studeamus.
15. Caesar profecturus Romam non exspectavit.
16. Caesar senatus in eum beneficia commemoravit, quod rex appellatus esset.
17. Hannibal magnas copias comparat, quibus Italiam in potestatem suam redigat.
18. Primo quaeremus quae consilia probata sint.
19. Ut aegro, dum anima est, spes esse dicitur, sic ego, quoad Pompeius in Italia fuit, sperare non destiti.
20. Ita fit ut adsint propterea quod officium sequuntur, taceant autem idcirco quia periculum vitant.

TABLE 11
ABILITY TO TRANSLATE LATIN SENTENCES
 LATIN SENTENCE TEST B
 Average Scores by Schools
 YEAR II

School	Average Score	School	Average Score
3	2.46	2	3.99
6	3.35	14	3.84
4	3.38	30	4.15
9	3.57	21	4.25
26	3.19	1	5.38
19	3.47	16	4.25
7	3.52	5	4.42
23	3.82	34	4.23
18	3.83	8	3.40
31	3.93	22	4.69
17	3.99	11	4.52
25	4.10	33	4.63
10	6.05	20	4.43
24	3.95	27	4.84
13	3.99	15	5.29
32	3.90	29	5.41
12	4.10		

TABLE 12
ABILITY TO TRANSLATE LATIN SENTENCES
 LATIN SENTENCE TEST B
 Average Scores by Schools
 YEAR III

School	Average Score	School	Average Score
3	3.51	32	4.65
6	4.48	12	4.71
2	3.61	14	4.75
11	4.52	20	4.83
9	4.04	19	4.75
34	4.20	31	4.79
7	4.27	25	4.77
4	4.35	17	4.84
18	4.35	22	4.81
30	4.38	24	4.90
10	4.49	16	5.01
8	4.41	1	5.22
21	4.46	5	5.14
15	4.27	13	5.40
23	4.52	27	5.75
26	4.58	29	6.04

TABLE 18
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Average Scores by Schools
YEAR IV

School	Average Score	School	Average Score
21	3.89	23	5.02
26	4.15	2	4.95
3	4.30	9	4.99
19	4.41	31	5.19
18	4.31	10	5.24
14	4.28	25	5.14
4	4.46	1	5.34
8	4.42	30	5.21
12	4.56	15	5.39
6	4.43	7	5.47
32	4.71	34	5.13
24	4.66	11	5.88
20	5.60	13	5.77
17	4.86	33	5.84
16	4.85	5	5.80
27	4.87	29	5.93
22	4.98		

TABLE 14
LATIN SENTENCE TEST B
RECORD OF IMPROVEMENT
In Terms of the Scores Made by Pupils
CLASS AVERAGES¹

Year	Class Averages	Year	Class Averages
I	3.29	III	4.62
II	4.09	IV	4.86

¹ These class averages are the averages of all the individual marks of pupils of the year in question. For example, in Year I the class average of 3.29 means that all of the individual scores of all pupils in this year when averaged gave this figure as the result. The individual score of a pupil is not the number of sentences which he translated, but it is the score which he obtained by the method described on the first page of Chapter V.

TABLE 15

ABILITY TO TRANSLATE LATIN SENTENCES

LATIN SENTENCE TEST A

Distribution Table for Number of Sentences Translated Correctly

Number of Sentences	Number of Pupils			
	Year I	Year II	Year III	Year IV
0	9	2	..	..
1	28	2	1	1
2	54	8	..	1
3	43	9	1	1
4	40	14	2	..
5	31	15	5	..
6	26	15	6	3
7	22	14	7	1
8	25	14	6	7
9	21	23	8	6
10	16	20	10	6
11	13	21	5	6
12	22	22	7	9
13	8	15	9	7
14	6	9	11	13
15	4	7	8	3
16	1	8	6	6
17	1	2	5	9
18 .....	..	1	1	3
19 .....	..	3	1	6
20 .....	..	3	3	..
21	1	4	2	4
22 .....	..	2	..	4
23 .....	..	..	..	6
24 .....	..	..	..	..
25 .....	..	..	..	2
26 .....	..	..	..	1
27 .....	..	..	..	..
28 .....	..	..	..	..
29 .....	..	..	..	..
30 .....	..	..	..	..
Number of Pupils Tested.....	371	233	104	105
Median Number of Sentences				
Correct	5.371	10.025	12.143	14.346
25 Percentile	3.407	6.550	8.667	11.042
75 Percentile	9.012	12.807	15.000	17.972
Quartile	2.803	3.129	3.166	3.465

LATIN SENTENCE TEST A

1. Puella est parva.
2. Via per oppidum est longa.
3. Puella cantat.
4. Est copia frumenti in agris nostris.
5. Homines pugnare parant.
6. Quis hic est?
7. Nauta stellam videt.
8. Eam legionem ad montem duxit.
9. Nocte castra movebo.
10. Has feminas laudo, quae bene laborant.
11. Miles amico sagittam dat.
12. Hoc facto, pueri discesserunt.
13. Dixit aedificium in quo Hannibal esset multos exitus habere.
14. Puer bonus a matre non saepe culpabitur.
15. Eis militibus fuerunt scuta gladiique.
16. Postero die collem fossa trium milium passuum munivimus.
17. Helvetii existimabant eam civitatem quae nuper pacata esset non bono animo esse.
18. Postridie pugnandi causa itinere converso nostros sequi coeperunt.
19. Cum Helvetii bello clarissimi essent, Caesar iter per provinciam dare recusavit.
20. Multi Servium imperio prohibere cupiunt.
21. Ante noctem statuendum est quid faciendum sit.
22. Hoc iter tanto difficilius est ut melius sit alterum temptare.
23. Priusquam pugnemus, arti militari studeamus.
24. Caesar profecturus Romam non exspectavit.
25. Caesar senatus in eum beneficia commemoravit, quod rex appellatus esset.
26. Quinque cohortes castris praesidio relinquit.
27. Hannibal magnas copias comparat, quibus Italiam in potestatem suam redigat.
28. Primo quaeremus quae consilia probata sint.
29. Ut aegro, dum anima est, spes esse dicitur, sic ego, quoad Pompeius in Italia fuit, sperare non destiti.
30. Ita fit ut adsint propterea quod officium sequuntur, taceant autem idcirco quia periculum vitant.

TABLE 16
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Number of Pupils in Each Year Who Translated Each
Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	325	202	94	91
2	199	210	100	98
3	200	175	90	100
4	147	174	91	89
5	154	146	73	86
6	193	124	70	92
7	168	138	69	88
8	131	149	76	80
9	137	152	79	87
10	97	110	75	91
11	134	101	53	71
12	28	94	64	72
13	36	14	51	47
14	90	78	28	41
15	33	59	38	49
16	20	25	27	36
17	6	8	29	36
18	0	20	15	24
19	8	14	18	21
20	3	18	15	27
21	3	72	24	32
22	5	26	19	28
23	1	13	9	27
24	7	8	12	21
25	0	9	8	12
26	3	4	2	63
27	1	19	6	13
28	0	64	5	5
29	0	0	2	11
30	0	1	4	7

TABLE 17
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
 Per Cent of Pupils in Each Year Who Translated Each
 Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	87.6	86.7	88.7	86.7
2	53.6	90.1	94.3	93.3
3	53.9	75.1	84.9	95.2
4	39.6	74.7	85.8	84.8
5	41.5	62.7	68.9	81.9
6	52.0	53.2	66.0	87.6
7	45.3	59.2	65.1	83.8
8	35.3	63.9	71.7	76.2
9	36.9	65.2	74.5	82.9
10	26.1	47.2	70.8	86.7
11	36.1	43.3	50.0	67.6
12	7.5	40.3	60.4	68.6
13	9.7	27.4	48.1	44.8
14	24.2	33.5	26.4	39.0
15	8.9	25.3	35.8	46.7
16	5.4	30.9	25.5	34.3
17	1.6	10.7	27.3	34.3
18	0.0	11.2	14.2	22.9
19	2.2	6.0	17.0	20.0
20	0.8	7.7	14.1	25.7
21	0.8	6.0	22.6	30.5
22	1.3	3.4	17.9	26.7
23	0.3	3.9	8.5	25.7
24	1.9	3.4	11.3	20.0
25	0.0	8.6	7.5	11.4
26	0.8	1.7	1.9	60.0
27	0.3	5.6	5.7	12.4
28	0.0	3.0	4.7	4.8
29	0.0	0.0	1.1	10.5
30	0.0	0.4	3.8	6.7

TABLE 18
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A

P. E. Equivalents of the Difference Between Fifty Per Cent and the Per
 Cent in Each Year Who Translated Each Sentence Correctly

Sentence	Year I	Year II	Year III	Year IV
1	-1.713	-1.649	-1.795	-1.649
2	-0.134	-1.909	-2.344	-2.222
3	-0.145	-1.005	-1.531	-2.468
4	0.391	-0.986	-1.589	-1.524
5	0.318	-0.480	-0.731	-1.351
6	-0.074	-0.119	-0.612	-1.713
7	0.175	-0.345	-0.575	-1.462
8	0.559	-0.527	-0.851	-1.057
9	0.496	-0.579	-0.977	-1.409
10	0.949	0.104	-0.812	-1.649
11	0.527	0.250	....	-0.677
12	2.314	0.364	-0.391	-0.719
13	1.926	0.891	0.071	0.194
14	1.038	0.632	0.936	0.414
15	1.997	0.986	0.539	0.123
16	2.384	0.782	0.977	0.600
17	3.182	1.843	0.895	0.600
18 .....	....	1.803	1.589	1.101
19	2.986	2.305	1.415	1.248
20	3.571	2.114	1.595	0.968
21	3.571	2.305	1.115	0.756
22	3.300	2.706	1.363	0.922
23	4.083	2.614	2.035	0.968
24	3.077	2.706	1.795	1.248
25 .....	....	2.026	2.134	1.788
26	3.571	3.146	3.077	-0.376
27	4.083	2.357	2.344	1.713
28 .....	....	2.789	2.483	2.468
29 .....	....	....	3.077	1.859
30 .....	....	3.938	2.631	2.222

TABLE 19
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Final Scale Values

Sentence	Scale Value	Sentence	Scale Value
1	2.00	16	4.86
2	2.12	17	5.23
3	2.43	18	5.54
4	2.79	19	5.56
5	3.11	20	5.60
6	3.12	21	5.70
7	3.17	22	5.71
8	3.20	23	5.80
9	3.34	24	5.91
10	3.42	25	6.03
11	3.60	26	6.05
12	3.94	27	6.18
13	4.45	28	6.22
14	4.54	29	6.77
15	4.60	30	6.97

CONCLUSION CONCERNING ABILITY TO TRANSLATE
LATIN SENTENCES

When we consider the ability of the pupils involved in this investigation to translate simple Latin sentences, certain facts concerning the work in Latin in these secondary schools stand out with great clearness. Tables 10-14 set forth the results secured from the use of Latin Sentence Test B. The sentences of this test, with one or two exceptions, are of the grade of those found in Latin beginners' books in use at the present time. When the test was made up, it was supposed that it would prove too easy for third and fourth year pupils in secondary schools.

Table 1 shows the results for the entire group of pupils who took the test: In the first year the median number of sentences translated correctly was 1.93, in the second year, 3.77, in the third year, 5.66, and in the fourth year, 6.31. It must be remembered that on this test sufficient time was allowed for practically all pupils to translate all that they could translate anyway. This certainly is an inadequate result to secure from four years of instruction in

Latin: a median ability to translate about six of the easiest of twenty sentences of the degree of difficulty of the easier of those found in an ordinary beginners' book.

TABLE 20
 ABILITY TO TRANSLATE LATIN SENTENCES
 LATIN SENTENCE TEST A
 Average Scores by Schools
 YEAR I

School	Average Score	School	Average Score
1	2.05	24	3.10
12	2.08	2	3.11
26	2.38	14	3.20
7	2.54	13	3.45
6	2.58	17	3.45
18	2.93	10	3.48
4	2.86	5	3.90
21	2.55		

A glance at Tables 14 and 24 serves to impress the fact of the small amount of progress in Latin under current methods during the four years that it is studied. It will be understood that the class averages in Tables 14 and 24 for each year are the averages of the individual scores of all pupils and not the average number of sentences translated correctly. The average performance of all the pupils in Year I on Test B is 3.29. This is slightly more than

TABLE 21
 ABILITY TO TRANSLATE LATIN SENTENCES
 LATIN SENTENCE TEST A
 Average Scores by Schools
 YEAR II

School	Average Score	School	Average Score
26	2.63	13	3.47
6	2.90	18	3.57
4	3.00	17	3.65
24	3.19	21	3.74
14	3.22	1	3.56
7	3.92	2	3.77
10	3.31	5	4.35

TABLE 22
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Average Scores by Schools
YEAR III

School	Average Score	School	Average Score
13	5.08	10	3.90
6	3.41	26	3.96
2	3.73	1	3.97
7	3.75	4	4.25
21	3.83	24	4.44
18	3.90	5	4.90
14	3.91		

the scale value of the easiest sentence, which indicates that a very considerable number of pupils failed to get even one sentence correct. In the second year the class average is slightly less than the scale value of the third sentence. There seems to be only very slight improvement from the end of the second year to the end of the third year, for the average of all the pupils in the third year is about equal to the scale value of the fifth sentence. From the end of the third year to the end of the fourth year there is little improvement. In a word, the average for all pupils in the fourth year is not greater than the scale value of the sixth sentence.

It must be remembered that we are speaking here of the sentences at the easier end of the scale. The entire four years of Latin

TABLE 23
ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Average Scores by Schools
YEAR IV

School	Average Score	School	Average Score
21	3.97	10	4.78
6	3.65	2	4.80
18	3.93	1	4.97
14	3.92	7	5.09
26	4.07	13	5.50
24	4.37	5	5.63
4	4.45		

study in these schools resulted in an achievement such that at the end of the fourth year the average performance is represented by

TABLE 24
LATIN SENTENCE TEST A
RECORD OF IMPROVEMENT
In Terms of the Scores Made by Pupils
CLASS AVERAGES

Year	Class Averages	Year	Class Averages
I	2.88	III	3.98
II	3.58	IV	4.46

¹ See footnote, Table 14.

ability to translate a sentence of the grade of difficulty of the sixth sentence in Test B.

In general the same facts are shown in the results of Latin sentence Test A. The first twelve of these sentences are extremely easy, most of them having been selected from the first few pages of beginners' books. Thus all but a few of the sentences of this test are of the grade which pupils are supposed to have in their first year of Latin study and nearly the first dozen are such as they would probably meet in the first three months.

In Test A all the pupils of Year I secured an average about equal to the scale value of the fourth sentence. In Year II the gain in ability was such that the average performance about equalled the difficulty of the eleventh sentence. There was enough improvement during Year III so that the average performance was slightly above Sentence 12. During the fourth or final year of Latin study the ability of the pupils reached a point represented by Latin of the grade of difficulty represented by the thirteenth sentence.

In a word, as far as the results of these sentence tests go, it is clear that the improvement in ability to read the meaning of the simplest Latin is meager out of all proportion to the time, energy, and money devoted to instruction in this subject.

CHAPTER VI

THE CONNECTED LATIN TEST

NATURE OF THE TEST

The test which was used for a connected Latin test is reproduced on another page. It consisted of a rather easy passage of connected Latin, chosen with some minor modifications from Caesar's Civil War. The test was printed in the form of a folder so that when it was opened by the pupils they had three blank pages on which to write, with the Latin in sight.

METHOD OF GIVING THE TEST

In giving the test the pupils were first asked to provide themselves with pencil and paper, after which a folder was handed to each one. Directions were then given. The pupils were told that at a signal, given by saying "Start," they were to open their folders and begin promptly to write the thought of the Latin in English. It was made clear that at another signal, which would be given by saying "Stop," they were to cease writing promptly and close their folders, even if they had to leave the last word half written. Especial care was taken in the directions, to impress upon the minds of the pupils that they were not to write a literal translation of the Latin but that they were to get the thought and express correctly and in detail in their own words in good English all the essentials of it. The signal to cease writing was given at the end of exactly a quarter of an hour, and all of the folders were collected immediately.

METHOD OF SCORING THE TEST

The Connected Latin Test was scored with reference to ability to apprehend the meaning of the Latin. This was done by means of a key. The entire thought of the Latin selection was expressed in a series of short statements, which is called the key. Each point in the key was intended to state the essential idea contained in a certain section of the Latin. The key as a whole reproduced accur-

ately the main thought or the thread of the story of the test. In other words, it was such a reproduction in English of the thought of the Latin selection as would represent a degree of ability to interpret the Latin in English worthy of being scored as perfect. The test and the key appear below.

CONNECTED LATIN TEST

CAESAR'S DEFEAT OF POMPEY

AN EPISODE FROM THE CIVIL WAR

Pompeius suorum omnium hortatu statuerat proelio decertare. Simul Cæsar toti exercitui imperavit ne iniussu suo concurreret. Dixit se, cum id fieri vellet, signum daturum. Nostri milites dato signo progressi sunt. Eodem tempore equites ab sinistro Pompeii cornu procucurrerunt; quorum impetum noster equitatus non tulit.

Quod ubi Cæsar animadvertit, quartæ aciei, quæ se ad id tempus loco tenuerat, dedit signum. Illi celeriter procucurrerunt et tanta vi in Pompeii equites impetum fecerunt, ut eorum nemo consisteret. Eodem tempore tertiam aciem Cæsar, quæ quieta fuerat, procurrere iussit. Ita cum recentes atque integri defessis successissent, alii autem a tergo adorirentur, sustinere Pompeii milites non potuerunt atque universi terga verterunt. Neque vero Cæsar dubitavit, quin ab iis cohortibus quæ contra equitatum in quarta acie collocatæ essent, initium victoriæ oriretur, ut ipse in cohortandis militibus pronuntiaverat.

Sed Pompeius, ut equitatum suum pulsum vidit atque eam partem cui maxime confidebat perterritam animadvertit, aliis quoque diffusus acie excessit protinusque se in castra equo contulit et iis centurionibus quos in statione ad prætoriam portam posuerat, clare, ut milites exaudirent, "Tuemini," inquit, "castra et defendite diligenter, si quid durius acciderit. Ego reliquas portas circumeo et castrorum præsidia confirmo." Hæc cum dixisset, se in prætorium contulit summæ rei diffidens et tamen eventum exspectans.

Cæsar Pompeii militibus ex fuga intra vallum compulsis nullum spatium perterritis dari oportere existimans, milites cohortatus est ut beneficio fortunæ uterentur castraque oppugnarent. Qui, etsi magno æstu defessi, tamen ad omnem laborem animo parati imperio paruerunt. Castra a cohortibus quæ ibi præsidio erant relictæ industrie defendebantur, multo etiam acrius a barbaris auxiliis. Nam qui acie refugerant milites magis de reliqua fuga quam de castrorum defensione cogitabant. Neque vero diutius qui in vallo constiterant multitudinem telorum sustinere potuerunt, sed locum reliquerunt protinusque in altissimos montes confugerunt.

In castris Pompeii videre licuit multa quæ nimiam luxuriam et victoriæ fiduciam designarent, ut facile existimari posset nihil eos de eventu eius diei timuisse, qui non necessarias peterent voluptates.

Cæsar castris potitus, a militibus petivit ne in præda occupati reliqui negotii gerendi facultatem dimitterent. Qua re impetrata montem opere opere circummunire instituit. Pompeii milites, quod is mons erat sine aqua, diffisi ei loco, relicto monte, universi iugis eius Larisam versus se recipere cœperunt.

KEY TO CONNECTED LATIN TEST

1. Pompey had decided to fight a battle.
2. [He made this decision] at the unanimous solicitation of his men.
3. Caesar issued commands to his entire army
4. [He did this] at the same time
5. [These commands were] not to charge without his order.
6. He said he would give a signal
7. [He said he would do so] when he wished this to be done.
8. Our soldiers rushed forward
9. [They did so] at the giving of the signal.
10. Pompey's cavalry charged
11. [They did this] at the same time
12. [They advanced] from the left wing;

13. Our cavalry did not withstand their attack.
14. Caesar gave the signal
15. [He did so] when he noticed this
16. [He gave it] to the fourth line
17. [This was the line] which until then had remained at its post.
18. They rushed forward
19. [They did so] quickly
20. And they attacked Pompey's cavalry
21. [They did so] with violence
22. [It was] so great that not one of them (Pompey's men) held his position.
23. Caesar gave orders
24. [He did so] at the same time
25. [He gave them] to the third line
26. [This was the line] which had been disengaged
27. [The orders were] to advance.
28. Pompey's soldiers were not able to maintain their ground
29. And accordingly they all fled
30. [This happened] when new and fresh troops came
31. [They came] to the assistance of the wearied men
32. [This happened] (and) also when moreover others attacked them
33. [This attack was] from the rear.
34. Caesar really was in no doubt
35. [He did not doubt] that the beginning of victory was made by those cohorts
36. [They were the cohorts] which had been stationed opposite the cavalry
37. [This was] in the fourth line
38. [This was] as he had declared
39. [His declaration was made] in appealing to the soldiers.
40. But Pompey left the field of battle
41. And he immediately retreated
42. [He went] on horseback
43. [He retreated] to his camp
44. [This was because he was] in despair
45. [His despair was] concerning the rest
46. [He did this] when he saw his cavalry routed

47. [This happened] (and) when also he observed thrown into confusion that part
48. [This was the part] in which he had especial confidence
49. He said to the centurions
50. [These were they] whom he had placed on guard
51. [He had placed them] at the praetorian gate
52. [He spoke] in a loud voice
53. [He did so] in order that the soldiers might hear,
54. [His orders were] "Protect the camp,"
55. [He said further], "Defend it with diligence."
56. [He commanded them to do this] "in case of the occurrence of any disaster."
57. [He said], "I will go around to the other gate,"
58. [He also said], "I will encourage the guards of the camp."
59. He retired into his tent
60. [He did so] when he had said this
61. [He was] in despair concerning the issue
62. [He remained there] nevertheless waiting the outcome.
63. Caesar exhorted his soldiers
64. [His exhortation took place] after having forced Pompey's soldiers to flee
65. [They were forced to flee] into their entrenchment
66. [His exhortation was] to take advantage of the kindness of fortune
67. [He exhorted them also] (and) to attack the camp
68. [He did this] in the belief that no respite should be allowed the terrified soldiers.
69. They obeyed this command
70. [They were] ready for any difficulty
71. [They did this] although fatigued
72. [They were fatigued] by the intense heat.
73. The camp was defended
74. [It was done] energetically
75. [It was done] by the cohorts
76. [It was defended by those] which had been left there
77. [They had been left] for a guard,
78. [It was done] by the foreign auxiliaries
79. [It was done by them] even much more spiritedly.

80. For plans were in the minds of the soldiers
81. [They were the soldiers] who had fled from the field of battle
82. [The plans were] more with respect to further flight
83. [It was this rather] than concerning the defense of the camp.
84. And indeed unable to endure the great number of darts were they
85. [They were they] who had taken their stand on the fortification
86. But they left the place
87. And immediately they fled for refuge
88. [The place of refuge was] to the highest mountains.
89. In Pompey's camp it was possible to see many things
90. [These were things] which indicated excessive luxury
91. [They indicated] (and) also confidence in victory
92. [This prevailed to a degree] so that an inference might be made
93. [The inference was] that they had no apprehension
94. [They failed to be apprehensive] concerning the issue of the day
95. [This was] because they sought unnecessary pleasures.
96. Caesar begged his soldiers
97. [This was] after having obtained possession of Pompey's camp
98. [His request was] that they should not lose the opportunity.
99. [The opportunity consisted] of completing the undertaking
100. [There was danger of this] by being intent on plunder.
101. He began to girdle the mountain
102. [He did this] with a fortification
103. [He began to do this] after he had obtained their consent.
104. Pompey's soldiers left the mountain
105. [They did so] in distrust of that place
106. [They did this] because this mountain was without water
107. They (Pompey's soldiers) all began to retreat
108. [They retreated] towards Larissa
109. [They went] along its (the mountain's) ridges.

A word of explanation needs to be made with reference to the key. It will be noted that in most of the points certain words are in brackets. The purpose of this is that each element of the thought

may be properly connected with the idea to which it logically relates. In scoring the pupils' reproduction in English of the thought of the Latin, credit should not be given for an element of thought if it is incorrectly connected with what precedes, i. e., so connected that the total idea is wrong, although the particular element of thought in itself may be entirely correct. It was found in many of the pupils' papers that what they reproduced was very disconnected and disjointed. By way of illustration, in a pupil's paper the following was found:

Pompey had decided to fight a battle, at the giving of the signal, Pompey's cavalry charged.

The phrase, *at the giving of the signal*, joined to either what precedes or what follows it in the above translation, is wrong. The above is a typical pupil's translation. There are often disjointed, disconnected translations of disconnected portions of the Latin with large portions omitted. Now the point is that if the phrase referred to above is so connected with what precedes or follows that the idea is incorrect, credit should not be given for the point.

The portions in brackets in each point of the key are for the purpose of indicating the connection. It will be noticed that if the portions outside of the brackets are arranged as a connected passage they give a perfect literal translation of the Latin. A short section of the key follows to illustrate this idea.

Pompey had decided to fight a battle at the unanimous solicitation of his men. Caesar issued commands to his entire army, at the same time, not to charge without his order. He said he would give a signal, when he wished this to be done.

Each element of the thought is intended to be a natural unit. Sometimes this consists of one word only, sometimes of a phrase, and sometimes of an entire sentence.

An important problem was presented when it became necessary to determine the method to be followed in scoring the papers for ability to apprehend the meaning of Latin. It was possible to determine the amount attempted and the amount correct in terms of number of points of the key, but this would disregard the fact that different points may have different degrees of difficulty. As a matter of fact, all of the tables in which the scale values are given

show that the different sentences of the Latin sentence tests, the constructions of the grammar and the elements of Latin corresponding to various points of the key in the Connected Latin Test are all of somewhat widely varying degrees of difficulty. Therefore, merely to count the number correct or the amount correct in any of these tests is not an adequate method of scoring.

DERIVATION OF SCALE VALUES

It is apparent, then, that it is very desirable to have weighted scores for each of the points in the key in the case of a test like that under consideration at the present time. For finding the scale values of the points, the elaborate method used in the Latin Sentence Tests was not used, but a much simpler method was adopted. The P. E. values were found in the same manner. After these were found, a value of 1 was assigned to the easiest point of the key, and the values of all the other points were expressed as distances

TABLE 25
SCALE VALUES OF POINTS OF KEY
TO CONNECTED LATIN TEST

Points	Number of Pupils Attempting Each Point	Number of Correct Translations of Each Point	Per Cent Correct	P. E. Values	Weight- ings
1	1160	410	35.3	.559	2.91
2	1160	231	19.1	1.296	3.65
3	1160	889	76.6	-1.076	1.27
4	1160	411	35.4	.555	2.91
5	1160	283	24.3	1.033	3.38
6	1160	784	67.5	-.673	1.68
7	1160	635	54.7	-.175	2.18
8	1160	926	79.7	-1.232	1.12
9	1160	920	79.3	-1.211	1.14
10	1157	642	55.4	-.201	2.15
11	1157	862	74.5	-.977	1.37
12	1157	649	56.1	-.228	2.12
13	1155	615	53.2	-.119	2.23
14	1133	929	81.9	-1.351	1.00
15	1133	556	49.1	.033	2.38
16	1128	389	34.5	.592	2.94
17	1118	370	33.9	.616	2.97

TABLE 25—CONTINUED

Points	Number of Pupils Attempting Each Point	Number of Correct Translations of Each Point	Per Cent Correct	P. E. Values	Weight- ings
18	1110	819	73.8	— .945	1.41
19	1096	874	79.7	— 1.232	1.12
20	1077	809	75.1	— 1.005	1.35
21	1075	775	72.1	— .869	1.48
22	1051	581	55.3	— .198	2.15
23	1021	832	81.4	— 1.324	1.03
24	1025	786	76.7	— 1.081	1.27
25	1025	786	76.7	— 1.081	1.27
26	1002	629	62.7	— .480	1.87
27	998	781	78.2	— 1.155	1.20
28	846	493	58.2	— .307	2.04
29	811	459	56.5	— .243	2.11
30	821	177	21.5	1.170	3.52
31	812	143	17.6	1.380	3.73
32	788	124	15.6	1.499	3.85
33	781	187	23.9	1.052	3.40
34	740	451	60.9	— .410	1.94
35	629	183	29.0	.820	3.17
36	653	336	51.5	— .056	2.30
37	642	374	58.2	— .307	2.04
38	541	154	28.4	.847	3.20
39	523	104	19.8	1.259	3.61
40	338	37	28.4	.847	3.20
41	280	36	12.8	1.685	4.04
42	276	59	21.3	1.181	3.53
43	273	87	31.8	.702	3.05
44	271	3	1.1	3.395	5.75
45	270	3	1.1	3.395	5.75
46	451	347	76.9	— 1.091	1.26
47	365	174	47.6	.089	2.44
48	386	230	59.5	— .357	1.99
49	229	50	21.8	1.155	3.51
50	227	77	33.8	.620	2.97
51	221	35	15.8	1.487	3.84
52	206	18	8.7	2.016	4.37
53	202	45	22.2	1.135	3.49
54	195	59	30.2	.769	3.12
55	793	122	63.2	— .500	1.85
56	176	53	30.1	.773	3.12

TABLE 25—CONTINUED

Points	Number of Pupils Attempt- ing Each Point	Number of Correct Transla- tions of Each Point	Per Cent Correct	P. E. Values	Weight- ings
57	170	30	17.6	1.380	3.73
58	164	31	18.8	1.313	3.66
59	150	27	18.0	1.357	3.71
60	193	109	56.4	— .239	2.11
61	137	7	5.1	2.425	4.78
62	137	36	26.2	.945	3.30
63	131	54	41.2	.330	2.68
64	126	30	25.1	.996	3.35
65	125	70	56.0	.224	2.58
66	124	41	33.1	.648	2.99
67	122	44	36.1	.527	2.88
68	121	21	17.3	1.397	3.75
69	120	30	25.0	1.000	3.35
70	119	15	12.6	1.699	4.05
71	119	20	16.7	1.432	3.78
72	119	2	1.6	3.182	5.53
73	119	46	38.6	.430	2.78
74	119	24	20.1	1.243	3.59
75	119	41	34.5	.592	2.94
76	119	42	35.2	.563	2.91
77	118	36	30.5	.756	3.11
78	118	23	19.4	1.279	3.63
79	118	11	9.3	1.962	4.31
80	114	5	4.3	2.546	4.90
81	118	20	16.9	1.421	3.77
82	118	10	8.4	2.044	4.40
83	118	14	11.8	1.757	4.11
84	117	38	32.4	.677	3.03
85	117	20	17.1	1.409	3.76
86	95	49	51.5	— .056	2.30
87	116	57	49.1	.033	2.38
88	116	71	61.2	— .422	1.93
89	114	23	20.1	1.243	3.59
90	114	17	14.9	1.543	3.89
91	113	10	8.8	2.007	4.36
92	113	15	13.3	1.649	4.00
93	113	11	9.7	1.926	4.28
94	113	10	8.8	2.007	4.36
95	113	3	2.6	2.881	5.23

TABLE 25—CONTINUED

Points	Number of Pupils Attempting Each Point	Number of Correct Translations of Each Point	Per Cent Correct	P. E. Values	Weightings
96	113	22	19.4	1.279	3.63
97	113	17	15.0	1.537	3.89
98	112	12	10.7	1.843	4.19
99	112	7	6.2	2.281	4.63
100	112	5	4.3	2.546	3.90
101	112	22	19.6	1.269	3.62
102	112	16	14.3	1.582	3.93
103	112	4	3.5	2.686	5.04
104	106	40	37.7	.464	2.82
105	112	3	2.6	2.881	5.23
106	112	38	33.0	.652	3.00
107	111	35	31.5	.714	3.07
108	111	29	26.1	.949	3.30
109	111	2	1.8	3.111	5.46

from the first point. Table 25 gives the number of pupils who attempted the Latin corresponding to each point, the number who had each point correct, the per cent who had each point correct, the P. E. values and the weightings for each point. In tables 29-32 are given the results for all the schools.

It should be added that in several schools an unlimited amount of time was given for the test in order that the Latin corresponding to every point in the key might be attempted by some pupils. Thus every point was attempted by more than a hundred pupils. The results from the schools which had unlimited time are not included.

The method of scoring finally adopted in the Connected Latin Test was based upon three measures.

I. *The amount attempted.* This was found for each pupil by taking the aggregate of the scale values of the points of the key in the amount of Latin attempted by the pupil in the time allowed.

II. *The amount correct.* This was found also by taking the aggregate of the scale values of the points which were correct. This could be done very rapidly with an adding machine.

III. *Comprehension.* This was found by determining the per cent correct of the amount attempted. In order to get this for any pupil it was necessary only to divide his mark for the amount correct by his mark for amount attempted.

It is very desirable to have a single measure with which to express a pupil's total efficiency or that of an entire class. It is of so great importance to have such a measure of this kind that some slight sacrifice in statistical accuracy would be warranted if such a measure could be found. Thus far, however, no satisfactory method of finding a single coefficient of efficiency has been discovered.

TABLE 26
ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
 Distribution Table for Amount Attempted
In Terms of Number of Points of the Key

Amount Attempted	Number of Pupils		
	Year II	Year III	Year IV
0	5	..	5
1- 5 .....	..	..	..
6-10	2	2	1
11-15	23	5	4
16-20	32	7	8
21-25	54	12	9
26-30	125	57	38
31-35	68	44	30
36-40	121	76	68
41-45	41	41	43
46-50	20	18	15
51-55	14	15	16
56-60	13	15	16
61-65	3	8	8
66-70 .....	..	3	..
71-75 .....	..	1	..
76-80 .....	..	..	..
81-85 .....	..	1	..
86-90	2	2	..
91-95	1	..	..
96-100 .....	..	..	..

It has been necessary, therefore, to express the pupils' general efficiency in terms of two marks—amount correct and comprehension. The amount correct is believed to be a rather good measure of the pupils' ability. When there is added to this the mark for comprehension, we have an accurate measure of ability, although it is somewhat cumbersome by being expressed by two separate marks.

The amount correct indicates what the pupil can do correctly in the specified time. The comprehension indicates his degree of accuracy or his freedom from error in rendering Latin into English. A high score for comprehension would indicate that the pupil had correct about all that he did. If two pupils had the same mark for amount correct, but one had a high mark for comprehension and the other

TABLE 27
ABILITY TO APPREHEND THE MEANING OF LATIN
 CONNECTED LATIN TEST
 Distribution Table for Amount Correct
In Terms of Number of Points of the Key

Amount Correct	Number of Pupils		
	Year II	Year III	Year IV
0	21	8	5
1- 5	71	13	3
6-10	98	24	21
11-15	90	50	19
16-20	85	67	57
21-25	90	63	44
26-30	37	46	45
31-35	20	29	41
36-40	8	6	16
41-45	2	4	7
46-50	1	..	2
51-55	1	1	1
56-60 .....	..	..	..
61-65 .....	..	..	..
66-70 .....	..	1	..
71-75 .....	..	..	..
76-80 .....	..	..	..
81-85 .....	..	..	..
86-90 .....	..	..	..
91-95 .....	..	..	..
96-100 .....	..	..	..

had a low mark, it would indicate that the one who had the low mark for comprehension attempted a good deal more Latin than the other and consequently was inaccurate.

GENERAL RESULTS OF CONNECTED LATIN TEST

In Tables 29-32 are shown the main facts for ability to apprehend the meaning of Latin. Table 32 gives an idea of the results in each year in amount attempted, amount correct and comprehension.

TABLE 28
 ABILITY TO APPREHEND THE MEANING OF LATIN
 CONNECTED LATIN TEST
 Distribution Table for Comprehension
In Terms of Number of Points of the Key

Comprehension	Number of Pupils		
	Year II	Year III	Year IV
0	25	7	5
.01- .05	25	6	1
.06- .10	24	12	2
.11- .15	43	11	7
.16- .20	33	13	7
.21- .25	36	21	9
.26- .30	35	27	8
.31- .35	35	22	16
.36- .40	35	19	20
.41- .45	43	23	22
.46- .50	42	21	20
.51- .55	35	20	26
.56- .60	28	24	18
.61- .65	22	19	15
.66- .70	13	19	19
.71- .75	18	14	16
.76- .80	7	10	10
.81- .85	13	8	16
.86- .90	9	8	14
.91- .95	2	6	4
.96-1.00	2	2	5

In the tables referred to, the distribution of amount attempted, amount correct and comprehension is given in terms of number of points of the key. In Table 32 are given the class averages based on the individual scores of all the pupils in each year. The average score for all the pupils of Year II for amount attempted is equivalent to the aggregate scale values of the first thirty-seven points of the test, of which the amount correct is equivalent to the aggregate

scale values of the first ten points of the test. This gives a comprehension of twenty-eight. In other words, these pupils translated correctly less than one-third of the amount which they attempted. For all pupils of Year III, the amount attempted is equivalent to the aggregate scale values of the first forty points of the test, and the

TABLE 29
ABILITY TO APPREHEND THE MEANING OF LATIN
 CONNECTED LATIN TEST
 Class Averages
In Terms of the Scores Made by Pupils
YEAR II

School	Number of Pupils	Amount Attempted	Amount Correct	Comprehension
9	15	65.15	7.65	.12
26	16	79.30	7.67	.09
6	12	77.68	12.28	.16
17	34	44.26	12.99	.29
3	5	53.78	13.79	.26
23	19	70.69	16.86	.24
4	9	73.46	18.21	.25
2	14	75.67	19.02	.25
20	5	59.17	19.33	.33
14	12	61.02	21.99	.36
16	96	54.14	22.11	.41
18	20	98.69	22.14	.23
31	42	84.89	22.83	.27
24	10	99.58	23.61	.24
19	11	69.27	26.69	.38
12	23	77.94	27.14	.35
7	11	82.53	27.75	.34
10	15	65.70	28.04	.43
21	19	79.50	31.81	.40
1	9	76.87	32.79	.43
25	43	83.29	34.21	.41
30	19	74.07	35.38	.48
34	15	65.83	35.43	.54
13	4	103.99	38.00	.36
27	4	56.45	38.42	.68
22	13	78.71	41.64	.53
15	3	88.81	58.04	.65
5	23	84.16	60.86	.72
29	5	112.61	73.40	.65

amount correct is equivalent to the first twenty points, which yields a comprehension of forty-five. At the end of the fourth year the amount correct is approximately equivalent to the aggregate scale values of the first twenty-five points of the test. Four years of study have thus developed an average ability to write in English

TABLE 80
ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Class Averages
In Terms of the Scores Made by Pupils
YEAR III

School	Number of Pupils	Amount Attempted	Amount Correct	Comprehension
20	7	32.26	11.38	.35
9	8	72.10	19.91	.28
10	14	60.55	22.12	.37
26	9	74.40	23.40	.31
2	11	119.67	25.38	.21
21	21	89.14	26.70	.30
31	22	58.56	28.33	.48
14	6	94.96	29.63	.31
3	6	42.50	30.22	.71
18	20	116.42	32.20	.28
16	40	58.18	35.23	.61
22	6	76.72	35.48	.46
4	7	96.60	37.38	.39
25	26	80.82	38.11	.48
27	1	92.18	39.09	.42
12	13	82.56	40.56	.49
23	13	96.67	43.94	.45
17	27	73.82	43.99	.60
6	4	115.89	44.51	.38
29	2	79.33	44.73	.56
30	5	77.25	45.55	.59
19	8	105.46	46.60	.44
1	2	85.15	48.12	.55
15	1	56.67	52.84	.92
7	14	164.95	55.28	.34
5	10	83.00	56.70	.68
34	3	111.83	56.78	.51
24	4	103.57	57.92	.56
13	2	108.91	67.02	.62

in fifteen minutes the thought of a little less than fifteen lines of Latin of the difficulty of that represented in this test, with about eight and a half lines correct.

IMPROVEMENT IN TWO YEARS

We may next consider the improvement made from year to year. It would appear from Table 32 that from the end of the second year

TABLE 81
ABILITY TO APPREHEND THE MEANING OF LATIN
 CONNECTED LATIN TEST
 Class Averages
In Terms of the Scores Made by Pupils
YEAR IV

School	Number of Pupils	Attempted Amount	Amount Correct	Comprehension
27	4	40.54	21.58	.53
9	6	45.22	21.74	.48
3	3	95.16	23.65	.25
26	7	61.93	27.63	.45
18	19	120.15	31.38	.26
16	29	52.98	33.32	.63
31	17	55.18	34.06	.62
4	5	113.36	37.47	.33
20	5	76.68	38.92	.51
21	9	118.70	42.73	.36
12	8	99.71	43.03	.43
2	13	90.71	43.24	.48
14	11	84.18	44.73	.53
23	5	103.53	45.34	.44
6	4	108.92	45.62	.42
24	7	106.05	49.30	.46
19	5	107.18	49.50	.46
22	8	79.61	51.57	.65
17	37	93.24	52.21	.56
10	8	78.84	53.09	.67
25	7	88.65	54.39	.61
30	7	83.88	58.71	.70
5	12	87.29	60.72	.70
34	1	75.34	63.20	.84
15	5	95.94	65.12	.68
7	9	121.86	70.86	.58
1	5	88.49	70.89	.80
29	1	77.38	73.51	.95
13	4	129.77	85.23	.66

to the end of the third year, there is some improvement. The pupils of the third year attempted somewhat more Latin, and had a somewhat larger amount correct. The improvement in comprehension is represented by an increase from twenty-eight to forty-five. During the fourth year there seems to be only a very slight increase in ability. In terms of comprehension this means that fourth year

TABLE 82
CONNECTED LATIN TEST
RECORD OF IMPROVEMENT
In Terms of the Scores Made by Pupils
CLASS AVERAGES¹

Year	Amount Attempted	Amount Correct	Compre- hension
II	79.32	22.13	.28
III	90.07	40.67	.45
IV	94.92	49.00	.52

¹ See footnote, Table 14.

pupils can get correct twenty-four per cent more of what they write than can second year pupils. This seems hardly adequate as a result of two years of intensive study of Latin.

CONCLUSION CONCERNING ABILITY TO APPREHEND THE MEANING OF LATIN

From these facts one conclusion is inevitable. These secondary schools, which are well representative of all such schools in the State, and probably of secondary schools in general everywhere, are succeeding in developing, as a result of four years' work, a little more than fifty per cent accuracy in expressing Latin in English. In individual schools it falls as low as 25, 26, 33 and 36 per cent. As a result of so great inaccuracy it naturally follows that the amount of the thought of easy narrative Latin which pupils who have studied the subject four years are able to express correctly in English in a given time is extraordinarily meager. Here is definite objective evidence that high school pupils in general, in this State at least, under our present methods of teaching, are incapable of rapid, intelligent apprehension of the thought of ordinary easy Latin. In view of these facts, the teaching of Latin as now conducted in these secondary schools must be regarded as highly unsatisfactory.

CHAPTER VII

LATIN GRAMMAR TEST

The Latin Grammar Test measured the pupils' ability to describe and classify Latin constructions.

THE TEST

Directions to pupils:

In the sentences given below—

(a) Give the names of the constructions represented by the words in italics.

(b) Explain in each case the reason for the use of the construction, i. e., give in your own words the rule governing it.

Translations of sentences are supplied.

EXAMPLE:—

Galba *agricola* agrum habet.

(Galba, the farmer, has a field.)

(a) Construction: noun in the appositive case agreeing with Galba.

(b) Reason: an appositive agrees in case with the noun which it limits.

1. *Multis interfectis*, oppidum expugnativimus.

(Although many had been killed, we took the town by storm.)

(a) Construction:

(b) Reason:

2. *Multos annos* bellum gesserunt.

(They have waged war for many years.)

(a) Construction:

(b) Reason:

3. *Agricolae boni equis* frumentum dabunt.

(The good farmers will give grain to the horses.)

(a) Construction:

(b) Reason:

4. Viri *constantia magna* pugnant.
(The men fight with great steadfastness.)
(a) Construction:
(b) Reason:
5. Dixit *Belgas* unam partem incolere.
(He said that the Belgians inhabit one part.)
(a) Construction:
(b) Reason:
6. Castra consulum a nostris *paucis diebus* capientur.
(The camp of the consuls will be taken by our men in a few days.)
(a) Construction:
(b) Reason:
7. *Viro* erat pulcherrima domus.
(The man had a very beautiful house.)
(a) Construction:
(b) Reason:
8. Galli *copiis Romanis* inimici erant.
(The Gauls were hostile to the Roman forces.)
(a) Construction:
(b) Reason:
9. Dic mihi quot milites *sint* in illis castris.
(Tell me how many soldiers are in that camp.)
(a) Construction:
(b) Reason:-
10. Viros *subsidio* exercitui misit.
(He sent the men as an aid to the army.)
(a) Construction:
(b) Reason:
11. Legatio Roma venit quae voluntatem regis *cognoscat*.
(The embassy came from Rome to learn the wish of the king.)
(a) Construction:
(b) Reason:
12. Statim imperator iussit nuntios quam celerrimos litteras
 Romam portare.
(The commander immediately ordered the messengers to take the
 letters to Rome as quickly as possible.)
(a) Construction:
(b) Reason:

13. Te *tuo loco* demovere potuerunt.
(They were able to remove you from your place.)
(a) Construction:
(b) Reason:
14. Galli Romanos *magnitudine* corporum superant.
(The Gauls surpass the Romans in size of body.)
(a) Construction:
(b) Reason:
15. Ne *moremur* in urbe totam noctem.
(Let us not delay all night in the town.)
(a) Construction:
(b) Reason:
16. Non multi erant qui sine ullo vulnere *effugerent*.
(There were not many who escaped without any wound.)
(a) Construction:
(b) Reason:
17. Utinam ille omnis secum copias *eduxisset*.
(Would that he had led forth all his forces with him.)
(a) Construction:
(b) Reason:
18. Nisi inopia telorum *fuisset* oppugnationem sustinuissent.
(If there had not been a lack of weapons, they would have withstood the siege.)
(a) Construction:
(b) Reason:
19. Hostes in silvas fugerunt ut a nostris militibus non *viderentur*.
(The enemy fled into the forest so that they were not seen by our soldiers.)
(a) Construction:
(b) Reason:
20. Cum legio in proelium fortiter *isset*, hostibus non diutissime restitit.
(Although the legion had gone bravely into battle, it did not very long restrain the enemy.)
(a) Construction:
(b) Reason:

TABLE 33
ABILITY IN LATIN GRAMMAR
 Distribution Table for Number of Constructions Correct

Number of Constructions	Number of Pupils			
	Year I	Year II	Year III	Year IV
0	254	116	18	9
1	116	64	15	20
2	73	45	21	14
3	60	54	31	14
4	41	50	31	26
5	32	40	21	17
6	22	32	30	17
7	26	41	28	26
8	21	26	26	12
9	29	31	24	26
10	16	22	22	12
11	10	21	19	19
12	8	12	17	13
13	4	11	16	19
14	2	6	20	11
15	1	7	10	10
16 .....	..	3	8	12
17 .....	..	4	4	11
18 .....	..	4	1	10
19 .....	..	2	2	6
20 .....	..	..	..	..
Number of Pupils Tested.....	715	591	364	304
Median Number of Constructions				
Correct	1.892	4.330	7.536	8.750
25 Percentile .....	.704	1.496	4.194	4.731
75 Percentile	4.811	8.481	11.316	13.158
Quartile	2.054	3.493	3.561	4.214

TABLE 84
ABILITY IN LATIN GRAMMAR
 Number of Pupils in Each Year Who Answered Each Construction
 Correctly

Construction	Year I	Year II	Year III	Year IV
1	207	366	300	231
2	217	287	258	219
3	233	229	191	181
4	204	243	206	170
5	136	260	230	157
6	100	196	161	137
7	124	126	165	156
8	127	113	109	188
9	85	128	158	157
10	104	175	142	103
11	74	145	108	98
12	66	135	107	100
13	57	97	110	113
14	82	75	81	84
15	58	42	70	95
16	14	46	97	91
17	20	36	73	112
18	13	25	105	127
19	46	70	65	41
20	38	29	50	44

TABLE 35
ABILITY IN LATIN GRAMMAR
 Per Cent of Pupils in Each Year Who Answered Each Construction
 Correctly

Construction	Year I	Year II	Year III	Year IV
1	29.0	61.8	82.4	76.0
2	30.3	48.5	70.9	72.0
3	32.6	38.7	52.5	59.5
4	28.5	41.1	56.6	55.9
5	19.0	44.0	63.2	51.6
6	14.0	33.1	44.2	45.1
7	17.6	21.3	45.3	51.3
8	17.8	19.1	29.9	61.8
9	11.9	21.7	43.4	51.6
10	14.5	29.6	39.0	33.9
11	10.3	24.5	29.7	32.2
12	9.2	22.8	29.4	32.9
13	8.0	16.4	30.2	37.2
14	11.5	12.7	22.3	27.6
15	8.1	7.1	19.2	31.3
16	2.0	7.8	26.6	29.9
17	2.8	6.1	20.1	36.8
18	1.8	4.2	28.8	41.8
19	6.4	11.8	17.9	13.5
20	5.3	4.9	13.7	14.5

TABLE 86

ABILITY IN LATIN GRAMMAR

P. E. Equivalents of the Difference Between Fifty Per Cent and the Per Cent in Each Year Who Answered Each Construction Correctly

Construction	Year I	Year II	Year III	Year IV
I	0.820	-0.445	-1.380	-1.047
2	0.765	0.056	-0.816	-0.864
3	0.669	0.422	-0.093	-0.357
4	0.842	0.334	-0.246	-0.220
5	1.302	0.224	-0.500	-0.059
6	1.602	0.648	0.216	0.183
7	1.380	1.181	0.175	-0.048
8	1.368	1.296	0.782	-0.445
9	1.749	1.160	0.246	-0.059
10	1.569	0.795	0.414	0.616
11	1.875	1.024	0.790	0.685
12	1.971	1.105	0.803	0.656
13	2.083	1.450	0.769	0.484
14	1.780	1.692	1.130	0.882
15	2.074	2.177	1.291	0.723
16	3.044	2.103	0.927	0.782
17	2.834	2.293	1.243	0.500
18	3.111	2.562	0.829	0.307
19	2.257	1.757	1.363	1.636
20	2.397	2.453	1.622	1.569

TABLE 87

ABILITY IN LATIN GRAMMAR

Final Scale Values of Constructions

Construction	Scale Value	Construction	Scale Value
I	1.11	11	2.76
2	1.37	12	2.78
3	1.75	13	2.79
4	1.76	14	3.01
5	1.80	15	3.15
6	2.24	16	3.21
7	2.25	17	3.22
8	2.31	18	3.29
9	2.33	19	3.34
10	2.46	20	3.60

LATIN IN SECONDARY SCHOOLS

TABLE 38
ABILITY IN LATIN GRAMMAR
AVERAGE SCORES BY SCHOOLS
YEAR I

School	Average Score	School	Average Score
17 .....	.07	10	1.09
27 .....	.19	4	1.16
1 .....	.30	35	1.14
14 .....	.37	16	1.20
9 .....	.36	21 .....	.60
6 .....	.28	20	1.20
23 .....	.46	24	1.25
32 .....	.50	13	1.37
3 .....	.56	11	1.12
19 .....	.50	22	1.69
30 .....	.71	29	1.72
12 .....	.87	33	1.76
31 .....	.87	34	2.24
7 .....	.91	25	2.24
26 .....	.90	5	2.33

TABLE 39
ABILITY IN LATIN GRAMMAR
AVERAGE SCORES BY SCHOOLS
YEAR II

School	Average Score	School	Average Score
14 .....	.59	20	1.81
27 .....	.85	10	1.73
18 .....	.92	33	1.87
23	1.05	35	1.83
7	1.09	30	1.86
6	1.16	25	1.85
17	1.17	19	1.98
16	1.22	22	2.07
9	1.18	11	2.09
26	1.29	21	2.17
2	1.27	34	2.29
3	1.49	8	2.28
4	1.64	29	2.29
32	1.63	12	2.35
31	1.63	24	2.39
1	1.66	5	2.79
13	1.72	15	3.01

TABLE 40
ABILITY IN LATIN GRAMMAR
AVERAGE SCORES BY SCHOOLS
YEAR III

School	Average Score	School	Average Score
14 .....	.23	11	2.24
17	1.46	26	2.28
18	1.66	35	2.25
20	1.65	10	2.34
6	1.64	34	2.59
27	1.75	12	2.52
23	1.72	16	2.57
7	1.66	24	2.52
33	1.80	13	2.70
3	1.82	30	2.61
2	1.92	19	2.67
1	2.00	15	2.67
4	2.07	5	2.76
32	2.06	22	2.91
25	2.10	8	3.00
21	2.13	29	3.01
9	2.19	31	2.30

TABLE 41
ABILITY IN LATIN GRAMMAR
AVERAGE SCORES BY SCHOOLS
YEAR IV

School	Average Score	School	Average Score
20	3.10	7	2.46
-18	1.23	13	2.66
6	1.50	10	2.65
3	1.74	35	2.46
17	1.91	19	2.76
26	1.96	1	2.72
21	2.03	22	2.73
2	2.06	25	2.74
9	2.08	30	2.74
16	2.07	12	2.77
27	2.14	11	2.82
32	2.25	34	2.79
23	2.18	33	3.01
31	2.26	15	2.99
24	2.27	5	3.15
4	2.33	29	3.34
8	2.41		

TABLE 42
ABILITY IN LATIN GRAMMAR
RECORD OF IMPROVEMENT
In Terms of the Scores Made by Pupils

CLASS AVERAGES ¹			
Year	Class Averages	Year	Class Averages
I	1.11	III	2.13
II	1.59	IV	2.27

¹ See footnote, Table 14.

CONCLUSION CONCERNING ABILITY IN GRAMMAR

An examination of the data shows that the Latin Grammar Test was too difficult for first year pupils. There is a very large group who failed to get a single construction correct and a smaller but relatively large group who had but one construction correct. In the second year a considerable number had none right. The test seemed fairly well adapted to the third and fourth year pupils.

The futility of the work in formal grammar is well set forth in Tables 38-42. It will be seen by examining Table 38 that seventeen schools failed to get an average score as high as the scale value of the easiest construction. In the second year eighteen schools had an average score which was less than the scale value of the third construction. In the first year no school had a score as high as the scale value of the tenth construction. In the second year the best school had an average score identical with the scale value of the fourteenth construction. The class average of all pupils in the first year was identical with the scale value of the easiest construction. In the second year the class average was slightly larger than the scale value of the second construction. All third year pupils averaged about as high as the value of the sixth construction. In the fourth year the class average is approximately the same as the value of the seventh construction.

One can but be surprised at the meagerness of the result, on the whole, in this test. The constructions nearly all come within the range of first year Latin and it would seem as though the majority of pupils in third and fourth years ought to answer them all. The average in none of the four years is half the number of constructions. Formal knowledge of construction, it will be remembered, is a thing which these schools make to a large degree the end and aim of Latin instruction, and it seems clear that when less than nine out of twenty is the average for 300 pupils after four years' work, there must be waste in the process.

CHAPTER VIII

LATIN VOCABULARY TEST

NATURE OF THE TEST

In the Latin Vocabulary Test the same plan was carried out as in the grammar test. The method of scoring was the same as in the case of the grammar test. The words of the vocabulary test were chosen from a list of words found in each of seven Latin beginners' books in common use.

The test is reproduced below.

LATIN VOCABULARY TEST

1. semper	14. inopia	27. numquam	40. cotidie
2. proelium	15. prope	28. fio	41. fortis
3. facio	16. domus	29. accipio	42. timeo
4. spes	17. fossa	30. post	43. scutum
5. vallum	18. nihil	31. murus	44. scio
6. capio	19. saepe	32. regnum	45. hostis
7. auxilium	20. miles	33. gero	46. ipse
8. supero	21. hiems	34. bene	47. munio
9. pilum	22. salus	35. annus	48. quisquam
10. etiam	23. aliquis	36. acies	49. copia
11. intellego	24. vinco	37. pedes	50. pax
12. quaero	25. pervenio	38. periculum	
13. iubeo	26. nolo	39. conor	

TABLE 48

ABILITY IN LATIN VOCABULARY

Distribution Table for Number of Words Correct

Number of Words	Number of Pupils			
	Year I	Year II	Year III	Year IV
0	8	4	..	..
1	9	1	..	..
2	5	2	..	..
3	4	2	..	..
4	8	1	..	..
5	9	..	..	..
6	6	2	..	..
7	13	..	..	..

TABLE 43—CONTINUED

Number of Words	Number of Pupils			
	Year I	Year II	Year III	Year IV
8	10	1	..	..
9	12	..	..	..
10	10	1	..	..
11	7	1	..	..
12	8	1	..	..
13	7	1	..	..
14	7	1	..	..
15	8	..	..	..
16	7	1	..	..
17	8	2	..	..
18	4	1	..	..
19	6	..	..	..
20	6	1	..	..
21	6	..	..	..
22	7	1	1	..
23	10	2	..	..
24	5	1	..	..
25	7	2	..	..
26	7	2	..	..
27	8	1	..	3
28	11	4	1	..
29	12	5	..	..
30	5	4	2	..
31	6	8	3	1
32	12	10	..	..
33	11	2	1	2
34	13	7	2	..
35	12	8	2	4
36	10	3	4	1
37	8	9	3	4
38	11	9	3	7
39	17	13	3	9
40	15	12	11	12
41	13	9	8	9
42	13	12	10	10
43	12	12	9	11
44	4	11	13	5
45	3	8	5	7
46	5	11	16	10
47	2	1	9	2
48	2	9	6	4

TABLE 43—CONTINUED

Number of Words	Number of Pupils			
	Year I	Year II	Year III	Year IV
49 .....	..	6	4	2
50 .....	..	6	1	1
Number of Pupils Tested.....	409	211	117	104
Median Number of Words				
Correct	27.063	39.308	42.500	42.000
25 Percentile	12.156	31.938	40.386	39.444
75 Percentile	37.344	43.875	46.422	45.000
Quartile	12.594	5.969	3.018	2.778

TABLE 44

ABILITY IN LATIN VOCABULARY

Number of Pupils in Each Year Who Gave the Correct Meaning
of Each Word

Word	Year I	Year II	Year III	Year IV
1	287	190	115	83
2	292	187	115	81
3	320	200	115	83
4	321	198	117	83
5	265	185	113	83
6	288	194	115	80
7	286	194	117	80
8	251	190	113	80
9	264	184	110	80
10	290	190	115	81
11	296	153	93	68
12	320	198	112	80
13	270	195	110	81
14	273	192	112	80
15	218	185	115	83
16	253	193	108	79
17	235	154	100	78
18	198	181	111	79
19	253	184	109	72
20	249	175	110	76
21	177	180	111	81
22	169	164	104	81
23	272	149	95	74
24	220	170	105	72
25	239	171	92	76
26	243	160	101	73

TABLE 44—CONTINUED

Word	Year I	Year II	Year III	Year IV
27	179	152	111	83
28	203	164	108	76
29	173	172	101	73
30	204	157	91	69
31	182	170	101	82
32	246	131	87	73
33	145	155	95	70
34	188	172	96	64
35	162	159	92	73
36	162	138	78	52
37	149	134	91	67
38	202	139	81	55
39	331	181	114	80
40	188	121	68	55
41	129	116	81	61
42	134	125	72	62
43	146	143	77	60
44	93	81	88	68
45	71	100	71	54
46	41	103	60	64
47	53	82	68	49
48	44	86	45	18
49	22	62	61	44
50	48	198	45	45

TABLE 45

ABILITY IN LATIN VOCABULARY

Per Cent of Pupils in Each Year Who Gave the Correct Meaning
for Each Word

Word	Year I	Year II	Year III	Year IV
1	70.2	90.5	98.3	79.8
2	71.4	89.0	98.3	77.9
3	78.2	95.2	98.3	79.8
4	78.5	94.3	100.0	79.8
5	64.8	88.1	96.6	78.8
6	70.4	93.2	98.3	76.9
7	69.9	92.3	100.0	76.9
8	61.4	90.5	96.6	76.9
9	64.5	87.6	94.0	76.9
10	70.9	90.5	98.3	77.9

TABLE 45—CONTINUED

Word	Year I	Year II	Year III	Year IV
11	72.4	72.9	79.5	65.4
12	78.2	94.3	95.7	76.9
13	66.0	92.9	94.0	77.9
14	66.7	91.4	95.7	76.9
15	53.3	88.1	98.3	79.8
16	61.9	91.9	92.3	76.0
17	57.5	73.3	85.5	75.0
18	48.4	86.2	94.9	76.0
19	61.9	87.6	93.2	69.2
20	60.9	83.3	94.0	73.1
21	43.3	85.7	94.9	77.9
22	41.3	78.1	88.9	77.9
23	66.5	71.0	81.2	71.2
24	53.8	81.0	89.7	69.2
25	58.4	81.4	78.6	73.1
26	59.4	76.2	86.3	70.2
27	43.8	72.4	94.9	79.8
28	49.6	78.1	92.3	73.1
29	42.3	81.9	86.3	70.2
30	49.9	74.8	77.8	66.3
31	44.5	81.0	86.3	78.8
32	60.1	62.4	74.4	70.2
33	35.5	73.8	81.2	67.3
34	46.0	81.9	82.1	61.5
35	39.6	75.7	78.6	70.2
36	39.6	65.7	66.7	50.0
37	36.4	63.8	77.8	64.4
38	49.4	66.1	69.2	52.9
39	80.9	86.2	97.4	76.9
40	45.9	57.6	58.1	52.9
41	31.5	55.2	69.2	58.7
42	32.8	59.5	61.5	59.6
43	37.5	68.1	65.8	57.7
44	22.7	38.6	75.2	65.4
45	17.4	47.6	60.7	51.9
46	10.0	49.0	51.3	61.5
47	13.0	39.0	38.1	47.1
48	10.8	41.0	38.5	17.3
49	5.4	29.5	52.1	42.3
50	11.7	94.3	28.5	43.3

TABLE 46

ABILITY IN LATIN VOCABULARY

P. E. Equivalents of Differences Between Fifty Per Cent and the Per Cent in Each Year Who Gave the Correct Meaning for Each Word

Word	Year I	Year II	Year III	Year IV
1	-0.786	-1.944	-3.146	-1.238
2	-0.838	-1.819	-3.146	-1.140
3	-1.155	-2.468	-3.146	-1.238
4	-1.170	-2.344	....	-1.238
5	-0.563	-1.749	-2.706	-0.786
6	-0.795	-2.211	-3.146	-1.091
7	-0.773	-2.114	....	-1.091
8	-0.430	-1.944	-2.706	-1.091
9	-0.551	-1.713	-2.305	-1.091
10	-0.816	-1.944	-3.146	-1.140
11	-0.882	-0.904	-1.222	-0.588
12	-1.155	-2.344	-2.546	-1.091
13	-0.612	-2.177	-2.305	-1.140
14	-0.640	-2.026	-2.546	-1.091
15	-0.123	-1.749	-3.146	-1.238
16	-0.449	-2.074	-2.114	-1.047
17	-0.280	-0.922	-1.569	-1.000
18	0.059	-1.616	-2.425	-1.047
19	-0.449	-1.713	-2.211	-0.744
20	-0.410	-1.432	-2.305	-0.913
21	0.250	-1.582	-2.425	-1.140
22	0.326	-1.150	-1.811	-1.149
23	-0.632	-0.820	-1.313	-0.829
24	-0.141	-1.302	-1.875	-0.744
25	-0.315	-1.324	-1.176	-0.913
26	-0.353	-1.057	-1.622	-0.786
27	0.231	-0.882	-2.425	-1.238
28	0.015	-1.150	-2.114	-0.913
29	0.288	-1.351	-1.622	-0.786
30	0.004	-0.991	-1.135	-0.624
31	0.205	-1.302	-0.624	-1.186
32	-0.380	-0.468	-0.972	-0.786
33	0.551	-0.945	-1.313	-0.665
34	0.149	-1.351	-1.363	-0.434
35	0.391	-1.033	-1.176	-0.786
36	0.391	-0.600	-0.640	....
37	0.516	-0.523	-1.135	-0.547
38	0.022	-0.616	-0.744	-0.108
39	-1.296	-1.616	-2.881	-1.091

TABLE 46—CONTINUED

Word	Year I	Year II	Year III	Year IV
40	0.041	—0.284	—0.303	—0.108
41	0.714	—0.194	—0.744	—0.322
42	0.660	—0.357	—0.434	—0.360
43	0.543	—0.698	—0.603	—0.288
44	1.110	0.430	—1.009	—0.588
45	1.931	0.089	—0.403	—0.071
46	1.900	0.037	—0.048	—0.434
47	1.670	0.414	—0.303	0.108
48	1.835	0.337	0.434	0.100
49	2.384	0.799	—0.078	0.288
50	1.765	—2.344	0.434	0.250

TABLE 47
ABILITY IN LATIN VOCABULARY
Final Scale Values

Word	Scale Value	Word	Scale Value
1	2.70	26	3.37
2	2.73	27	3.45
3	2.85	28	3.50
4	2.86	29	3.51
5	2.87	30	3.55
6	2.88	31	3.57
7	2.89	32	3.59
8	2.90	33	3.60
9	2.91	34	3.63
10	2.92	35	3.68
11	2.93	36	3.72
12	2.94	37	3.86
13	2.97	38	3.87
14	2.98	39	4.03
15	3.08	40	4.07
16	3.12	41	4.10
17	3.23	42	4.11
18	3.25	43	4.22
19	3.27	44	4.31
20	3.28	45	4.47
21	3.32	46	4.52
22	3.33	47	4.68
23	3.34	48	4.84
24	3.35	49	5.01
25	3.36	50	5.07

TABLE 48
ABILITY IN LATIN VOCABULARY
 AVERAGE SCORES BY SCHOOLS
In Terms of the Scores Made by Pupils
 YEAR I

School	Average Score	School	Average Score
26	2.99	12	2.65
6	3.16	1	3.65
18	3.16	21	4.04
2	3.33	4	3.82
33	3.38	10	3.65
14	3.51	17	3.73
7	3.20	13	3.78
35	3.07	5	4.02

TABLE 49
ABILITY IN LATIN VOCABULARY
 AVERAGE SCORES BY SCHOOLS
In Terms of the Scores Made by Pupils
 YEAR II

School	Average Score	School	Average Score
26	3.23	18	3.97
4	3.65	21	3.75
6	3.71	17	4.01
10	3.44	13	4.11
14	3.35	33	3.95
2	4.07	1	4.52
35	2.90	5	4.73
7	3.89		

TABLE 50
ABILITY IN LATIN VOCABULARY
 AVERAGE SCORES BY SCHOOLS
In Terms of the Scores Made by Pupils
 YEAR III

School	Average Score	School	Average Score
21	4.21	10	4.25
35	3.86	7	4.49
14	4.16	26	4.02
6	4.05	1	4.47
18	4.14	2	4.14
4	4.20	5	4.69

TABLE 51
 ABILITY IN LATIN VOCABULARY
 AVERAGE SCORES BY SCHOOLS
In Terms of the Scores Made by Pupils
 YEAR IV

School	Average Score	School	Average Score
35	4.06	10	4.10
6	3.92	33	4.20
18	3.97	1	4.41
21	4.02	7	4.15
14	4.02	2	4.48
26	4.12	5	4.56
4	4.21	13	4.23

TABLE 52
 ABILITY IN LATIN VOCABULARY
 RECORD OF IMPROVEMENT
In Terms of the Scores Made by Pupils
 CLASS AVERAGES¹

Year	Class Averages	Year	Class Averages
I	3.39	III	4.24
II	3.89	IV	4.17

¹ See footnote, Table 14.

CONCLUSION CONCERNING KNOWLEDGE OF VOCABULARY

With reference to knowledge of vocabulary the result seems to be a rather satisfactory one. The efficiency appears to be reasonably high in each year, and there is an improvement from year to year. The test appears to be neither too hard nor too difficult in any year.

The class average for Year I is a little higher than the scale value of the twenty-sixth word. This would appear to be a reasonably satisfactory result. The second year class had an average as high as the thirty-ninth word, while the third year class had an average nearly equal to the forty-third word. The fourth year class did not average as high as this.

The failure in ability to interpret connected Latin or to translate Latin sentences apparently is not due to lack of knowledge of easy Latin words.

CHAPTER IX

TIME DEVOTED TO STUDY OF LATIN

VARIATIONS IN TIME

Table 53 gives in tabular form the facts concerning the amount of time devoted to the study of Latin by the thirty-five schools included in this investigation. A glance at the table shows that the school which uses the largest time-allotment spends on the average more than three times as much time per week throughout four years as does the school with the lowest time allotment. In the first year, School 2 uses less than a third of the total amount of time per week which is used by School 13. The time allotments of these two schools do not differ to such a great extent in the matter of class work throughout the four years, although the time allotment of School 13 is somewhat greater, but in the amount of time spent in the study of Latin outside of class the difference is marked. In the first year, for example, the pupils of School 13 devote five times as much time to Latin study outside of class. Do these large time allotments found in the case of some schools produce results commensurate with the time? Or is there waste of effort here? Specific discussion of the efficiency of the work of various schools in relation to their time allotments will be reserved for a later chapter.

NORMS OF CURRENT PRACTICE

It is interesting to have before us an array of data like those in Table 53. These are probably well representative of what would be found if the same facts had been collected from all of the schools of the State. With this table before him the school administrator may know how his school compares with current practice in this respect. He will thus have a valuable aid in the administration of his school. He will be able to see at a glance that the middle time allotments in each half are 418 and 565. By comparing the time spent on Latin in his own school, he will know whether he is spending as much or more time than other schools. By studying the whole problem of time allotments and efficiency, as treated in Chapter XIII, he will be able to discover whether the time allotments in his school are justified or not.

TABLE 53
TIME DEVOTED TO STUDY OF LATIN

School	Number of minutes per week of class work in Latin on part of pupils				Number of minutes per week devoted to study of Latin by pupils outside of class in school or out				Total number of minutes per week devoted to study of Latin by pupils in school or out				Average number of minutes per week devoted to the study of Latin in four years
	I	II	III	IV	I	II	III	IV	I	II	III	IV	
2	120	120	120	120	120	120	120	120	240	240	240	240	240
19	120	200	200	200	150	200	200	200	350	400	400	400	388
15	120	140	150	150	250	250	250	250	370	390	400	400	390
6	190	200	190	190	200	200	200	200	390	400	390	390	393
17	270	225	250	250	30	100	200	250	300	325	450	500	393
35	200	200	200	200	200	200	200	200	400	400	400	400	400
21	225	225	225	180	150	225	225	180	375	450	450	360	402
31	180	195	190	185	125	175	300	300	305	370	490	485	413
3	190	190	190	190	200	225	235	252	390	415	425	442	418
33	200	200	200	200	150	250	250	250	350	450	450	450	425
16	200	225	225	225	240	215	250	200	440	440	475	425	445
18	225	225	225	225	225	225	225	225	450	450	450	450	450
24	200	200	200	200	250	350	250	200	450	550	450	400	463
14	225	225	225	225	225	225	225	300	450	450	450	525	469
26	190	190	190	190	225	300	300	300	415	490	490	490	471
34	200	200	200	200	200	300	300	300	400	500	500	500	475
1	200	200	200	200	300	300	300	300	500	500	500	500	500
23	200	200	200	200	300	300	300	300	500	500	500	500	500
29	200	200	200	200	225	300	375	375	425	500	575	575	519
27	220	220	220	220	300	300	300	300	520	520	520	520	520
25	225	225	225	180	225	300	345	360	450	525	570	540	522
9	225	225	225	225	300	300	300	300	525	525	525	525	525
22	200	200	200	200	350	300	350	350	550	500	550	550	537
10	200	200	200	200	300	300	300	450	500	500	500	650	538
8	450	225	225	180	0	225	400	450	450	450	625	630	539
32	190	190	190	175	225	330	450	450	415	520	640	625	550
20	200	200	200	160	400	400	400	300	600	600	600	460	565
30	195	195	195	195	200	340	430	420	485	535	625	615	565
4	175	175	175	175	215	400	480	480	390	575	655	655	569
5	200	200	200	200	375	375	375	375	575	575	575	575	575
12	200	200	200	200	300	350	400	450	500	550	600	650	575
7	205	220	220	165	435	435	400	240	640	655	620	405	580
28	200	200	200	200	250	300	375	375	450	575	575	800	580
11	300	240	300	300	300	300	375	375	600	540	675	675	623
13	200	200	200	160	600	600	600	600	800	800	800	760	790

CHAPTER X

METHOD IN LATIN¹

METHODS IN USE

There are two principal methods of teaching Latin in use in the State. They will be called in this discussion (1) the grammatical method and (2) the translation method. It is necessary to describe these somewhat fully. Of course there are variations in the different schools. These will be described in the proper place as far as is necessary.

THE TRANSLATION METHOD

GENERAL PLAN IN THE FIRST YEAR

The idea underlying the translation method is that the pupil shall be introduced to the subject not by a systematic study of the grammar of the language but by gaining an acquaintance with form and usage through extensive practice in translation of Latin into English. The pupils commence to translate Latin at the beginning with no preliminary study of grammar. The teacher presents in sentences a few of the most common forms, with sufficient illustration and explanation to enable the pupils to understand them, such as the third person singular and plural of two or three verbs, the nominative and accusative of a few nouns and perhaps several genitive forms. It is not considered necessary to give to these the names *genitive* or *accusative* or whatever they may be, but the pupils learn by the translation of the sentences which they have that certain forms have certain meanings. They simply learn to translate the various forms by practice in doing so. No conjugations or declensions are learned. The principle underlying the procedure is that it is entirely possible for pupils to learn to react correctly to grammatical forms in Latin without being able to describe and classify them, just as the young child may use many of the forms

¹ See article in *Journal of Educational Psychology*, Vol. XI, No. 1, January, 1920, by W. H. Fletcher, entitled *The Translation Method in Latin*.

of the English language with absolute correctness without knowing a single fact of grammar. It is claimed that it is thus possible to learn to translate a foreign language without first mastering the science upon which it is based.

The first lessons in this method are taught entirely from the blackboard without the use of a book. Many sentences are written and read in each period. Such explanations in relation to form and construction as are essential to the progress of the work are made orally by the teacher. New forms are not introduced in any fixed order, are always met first by the pupils in sentences, are explained by the teacher and assimilated by the pupils by reacting to them again and again as they occur in the translation. The pupils are not required to describe or classify the various forms and constructions which they use. To be able to react to them correctly is sufficient. The second person of a verb may not be taught for a month after the third person and the pupil may know a certain nominative form for some time before he becomes familiar with the corresponding ablative. All of the forms which come within the scope of first year Latin are learned in this way during the year. It is held that making the pupils focally, explicitly conscious of a multiplicity of minute particulars of form and syntax at the outset is unfavorable to the best development of power to get thought from the language rapidly and accurately. Pronunciation is learned largely by imitation. Each sentence at the beginning is pronounced clearly and distinctly by the teacher and the pupils repeat after him, several times at first, thus, it is claimed, learning pronunciation in a rational manner from the lips of the teacher. After a few days of this practice the pupils begin to pronounce for themselves and do so independently thereafter under the guidance and direction of the teacher. Each lesson at first is read in Latin and translated several times so that each pupil gets abundant practice in reacting correctly to the various forms.

PERCEPTION CARD DRILL

Perception cards are used as a valuable means of drill on forms and for vocabulary. Words, phrases and idioms are printed on white cards of stiff material four inches wide and nine or ten inches long, and a few minutes of very rapid quick-perception drill are

given on these words each day. In this drill the pupils respond to whatever form appears on the card, with the correct translation. This is considered of especial value in connection with noun and verb forms. Instead of memorization and recitation of paradigms, rapid drill of this kind is given daily and in these exercises the forms never appear in any particular order. Each day a few of the more common of the words, idioms and other short expressions are put on the cards. The number of cards grows throughout the year and after a time a considerable supply accumulates, but as the days go by, the pupils become familiar with the cards which have been in use for a time. Consequently, as fast as they become able to respond automatically to the form on any particular card it is dropped out of those in use. Thus there is a constant process of adding new cards and dropping others. All of them are kept, however, and are reviewed frequently. After a considerable number of cards has accumulated the teacher will use fifty or sixty on one day, as many more the next, and so on, perhaps going over two or three hundred in a week. The drill is made very rapid. It is held that unless the perception is practically instantaneous its value is slight.

CHIEF EMPHASIS IN LEARNING FORMS AND CONSTRUCTIONS

The chief emphasis in this method, however, is placed upon the learning of all forms and constructions in a functional way, i. e., by meeting them again and again incidentally through much translation. No emphasis whatever is put on the formal learning of grammar by those schools which use the method as described.

USE OF BOOKS

At the end of about a month's work in this method the class is able to begin the translation of easy Latin from books, and from this point on, the greater part of it is done in this way. There are many excellent beginners' books on the market and some schools have a number of sets and do a large amount of translating during the year. These schools usually also possess a number of sets of books containing easy Latin stories, and very early the class can begin to translate the easiest connected Latin. From this time on a good deal of translation of this kind of material is done. The pupils deal to such an extent, from the first, with connected Latin that, it

is claimed, they get such a feeling for construction that a brief explanation of a new principle, when it is met in translation, often suffices to make its use clear to the pupil.

METHOD IN THE UPPER YEARS

During the years above the first, the same general method is followed. Whatever grammar is taught is usually presented through prose composition, in which one lesson a week is given. In this, no formal grammar lessons are assigned to be studied and recited. Texts in grammar are used as reference books. Principles of usage are taught orally by the teacher with the use of the blackboard on which to write illustrative sentences. In some schools the work is quite largely carried on in class with little or no study outside. The procedure in teaching a given construction might be something like the following. The pupils would probably have some familiarity with it from having met it in previous translation. The teacher's first step would be to find out by questions just what the class knew about it. This would also serve to recall to their minds all the knowledge which they had concerning it. The teacher would next explain to the class briefly, but clearly and concisely, the essential facts about the principle, illustrating his statements by writing on the board short Latin sentences containing the particular construction in question and having them translated by the pupils. This would be followed by sending the entire class to the board to write sentences containing the construction dictated by the teacher. A good many sentences would be dictated and written in this way in the period. In some schools a few sentences closely connected with the text being translated are written each day, but no more in amount than when one day a week is given to the prose composition. The large emphasis throughout this work is put on the learning of Latin usage functionally and not through a formal study of grammar from a text and a book on prose composition, although both are used.

THE GRAMMATICAL METHOD

GENERAL PLAN OF THE METHOD

In a part of the schools which were tested, the grammatical method is in use. These schools use a beginner's book containing

a systematic presentation of the elementary facts and principles of Latin grammar. There are grammatical rules illustrated by type sentences to be studied, conjugations and declensions to be learned, Latin sentences to be translated into English and English sentences to be written in Latin. Both the Latin and English sentences are usually based largely on the principles of grammar which the lesson in question is supposed to illustrate. There are usually short connected passages for translation throughout the book, but the amount of translation is very limited as compared with what some other schools do. The plan of the book is generally followed somewhat closely.

PARTICULAR POINTS IN THE GRAMMATICAL METHOD

The particular points to be noted in connection with this method in the first year are the following: (1) There is a very large amount of time devoted to instruction in formal grammar. (2) A good deal of time is spent on the memorization of forms independently of their use in translation. (3) The amount of translation is limited. (4) The amount of time devoted to study of Latin outside of school is large.

METHOD IN THE UPPER YEARS

In the years above the first in a part of the schools, grammar is emphasized daily in connection with the texts which are translated. In some of these schools regular grammar lessons are assigned, studied and recited. Daily attention is given to points of syntax as they are met in the translation. Usually this takes the form of detailed questions about points of grammar and the pupils are required to name, describe and classify the forms and constructions which occur. Grammar is also taught in connection with the weekly exercises in prose composition. In this pupils are usually assigned references to look up, grammar lessons are studied, the examples in the composition text are thoroughly examined and English sentences to illustrate the principles of the lesson are written in Latin.

EXTENT OF USE OF DIFFERENT METHODS

A third of the schools teach the grammatical method in about the way we have described it, i. e., in its pure form. Five schools

teach the translation method in some form,—no two of them following just the same procedure,—in general according to the principles which we have described. Three others teach a somewhat close approach to it. The remaining eight schools teach a modification of the grammatical method, in the direction of the translation method, or a modification of the translation method in the direction of the grammatical method. In these schools a text book is used in the first year, but a good deal less emphasis is put on the formal learning of grammar, a large amount of translation is done from the beginning, perception cards are used for drill, although paradigms are required to be memorized. Above the first year, a large amount of translation is required.

TYPES OF METHOD

In general, the different methods in use in the first year in the schools included in the test may be classified under three heads as follows:

A. Translation method with little or no systematic formal study of grammar and a large amount of translation.

B. (a) Translation method somewhat modified in the direction of the grammatical method, with a small amount of grammar and a good deal of translation.

(b) Grammatical method, materially modified in the direction of the translation method, with a good deal of translation.

C. Grammatical method with a large amount of systematic study of grammar and a limited amount of translation.

The procedure in teaching above the first year in all of the schools may be grouped into the following classes:

I. Attention largely given to translation with only the most incidental reference to syntax during the regular class periods. Grammar taught once a week in connection with prose composition. Chief emphasis distinctly on learning through use without formal drill. Prose sentences given, intended to illustrate and fix in mind facts of usage which have been met in the translation and learned functionally and perhaps somewhat incidentally. Much translation of Latin into English, a large part of which is at sight.

II. Attention largely given to translation with a limited amount of reference to points of syntax during regular class periods. Thorough drill in principles of grammar once a week in connection with prose composition. Considerable translation of Latin.

III. Systematic drill in grammar in connection with daily work in translation. Text on grammar used constantly for study and reference. Thorough drill in principles of grammar once a week in connection with prose composition.

Types of method are indicated by the designations used in the preceding paragraphs, such as A I, B I and C III. These designations will be used throughout the monograph to indicate methods used by the different schools. For example, the designation A I indicates that the school in question uses the method described under A above in the first year and that under I in the years above the first.

CHAPTER XI

VALUE OF THE STUDY OF GRAMMAR

STATEMENT OF THE PROBLEM

A study of the work of the schools and their reports indicates that there are large variations in the amount of time given to the direct teaching of Latin grammar. The problem involved in the title of this chapter at once suggested itself as one of the important aspects of the investigation. Do the schools which devote a very large amount of time to the direct teaching of grammar secure uniformly better results in knowledge of construction sufficient to justify the expenditure of this time? If not, there is waste effort in the time devoted to grammar.

AMOUNT OF GRAMMAR IN DIFFERENT SCHOOLS

In order to secure some information on this point twenty-four of the schools were arranged in three classes called Groups I, II and III, according to the amount of grammar taught. In the first group were placed those schools which teach the translation method in the first year, with little or no formal study of grammar, or a close approach to it. Five of these schools taught the translation method at the time of the test. Three taught a method which could not be classified as the translation method, but it was a method greatly modified in that direction, and a close approach to it. In all these schools the whole emphasis, as previously pointed out, is put on learning grammar incidentally by means of reacting to grammatical forms again and again in the translation of Latin, and the amount of time devoted to formal teaching of syntax is very much less than in the regular or modified grammatical method. The three schools which use the grammatical method in a much modified form, and with much less emphasis on the direct teaching of grammar and stress on learning grammatical forms and constructions through translation, are classed in this group. They are selected as the three schools, in addition to the first five, which in the last four years have put the least emphasis on formal teaching of grammar in the first year.

The schools selected for this comparison of method are schools well known to the writer and in which the results are comparable. Conditions are very similar in these schools.

In the case of all of these schools in Group I, in the years above the first, the teaching of grammar is restricted to one period a week and it is all taught in connection with the weekly exercises in prose composition.

TABLE 54
COMPARISON OF EFFICIENCY IN KNOWLEDGE
OF CONSTRUCTION
CLASS AVERAGES
YEAR I

Group	Method	School	Latin Grammar Test
I	A I	6	.28
	A I	2	.47
	A I	19	.50
	A I	18	....
	A I	15	....
	B I	24	1.25
	B II	29	1.72
	B II	30	.71
	Average of all pupils in this group.....		.75
	C II	5	2.33
II	C II	13	1.37
	C II	1	.30
	C II	10	1.09
	C II	3	.56
	C II	31	.87
	C II	25	2.24
	C II	16	1.20
	Average of all pupils in this group.....		1.47
III	C III	12	.87
	C III	9	.36
	C III	7	.91
	C III	14	.37
	C III	4	1.16
	C III	22	1.69
	C III	26	.90
	C III	27	.19
Average of all pupils in this group.....			.88

The schools in Group II teach the grammatical method in the first year in a greatly modified form with much less insistence on rigorous drill on grammar than is the case in Group III. They use a beginners' book containing grammar lessons, and considerable time is spent in direct teaching and drill on the principles and facts of grammar, but in a very concrete form and directly in connection with the translation of Latin sentences and connected passages. In

TABLE 55
COMPARISON OF EFFICIENCY IN KNOWLEDGE
OF CONSTRUCTION

CLASS AVERAGES

YEAR II

Group	Method	School	Latin Grammar Test
I	A I	6	1.16
	A I	2	1.27
	A I	19	1.98
	A I	18	.92
	A I	15	3.01
	B I	24	2.39
	B II	29	2.29
	B II	30	1.86
	Average of all pupils in this group.....		1.58
	C II	5	2.79
II	C II	13	1.72
	C II	1	1.66
	C II	10	1.73
	C II	3	1.49
	C II	31	1.63
	C II	25	1.85
	C II	16	1.22
III	Average of all pupils in this group.....		1.61
	C III	12	2.35
	C III	9	1.18
	C III	7	1.09
	C III	14	.59
	C III	4	1.64
	C III	22	2.07
	C III	26	1.29
	C III	27	.85
Average of all pupils in this group.....			1.46

the years above the first the teaching of grammar is restricted to one period a week and is all taught in connection with prose composition, in which one lesson a week is given. These schools teach somewhat more grammar than those in Group I.

The eight schools in Group III teach the grammatical method in the first year in a somewhat extreme and rigorous form. There is also a great deal of attention to formal learning of grammar in con-

TABLE 56
COMPARISON OF EFFICIENCY IN KNOWLEDGE
OF CONSTRUCTION
CLASS AVERAGES
YEAR III

Group	Method	School	Latin Grammar Test
I	A I	6	1.64
	A I	2	1.92
	A I	19	2.67
	A I	18	1.66
	A I	15	2.67
	B I	24	2.52
	B II	29	3.01
	B II	30	2.61
	Average of all pupils in the group.....		2.10
	C II	5	2.76
II	C II	13	2.70
	C II	1	2.00
	C II	10	2.34
	C II	3	1.82
	C II	31	2.30
	C II	25	2.10
	C II	16	2.57
Average of all pupils in this group.....			2.35
III	C III	12	2.52
	C III	9	2.19
	C III	7	1.66
	C III	14	.23
	C III	4	2.07
	C III	22	2.91
	C III	26	2.28
Average of all pupils in this group.....			1.75
			2.04

nection with the weekly exercises in prose composition. It is the custom in most of these schools to assign grammar lessons in connection with the references in the text on composition, to be studied and recited. In addition to this, persistent daily attention is given to grammar in connection with the translation of the texts studied in the class.

TABLE 57
COMPARISON OF EFFICIENCY IN KNOWLEDGE
OF CONSTRUCTION
CLASS AVERAGES
YEAR IV

Group	Method	School	Latin Grammar Test
I	AI	6	1.50
	AI	2	2.06
	AI	19	2.76
	AI	18	1.23
	AI	15	2.99
	BI	24	2.27
	BII	29	3.34
	BII	30	2.74
	Average of all pupils in this group.....		2.03
	CII	5	3.15
II	CII	13	2.66
	CII	1	2.72
	CII	10	2.65
	CII	3	1.74
	CII	31	2.26
	CII	25	2.74
	CII	16	2.07
	Average of all pupils in this group.....		2.38
III ¹	CIII	12	2.77
	CIII	9	2.08
	CIII	7	2.46
	CIII	4	2.33
	CIII	22	2.73
	CIII	26	1.96
	CIII	27	2.14
Average of all pupils in this group.....			2.41

¹ By an oversight this test was not given in School 14.

Schools in Group III make reports like the following:

- (a) Grammar is taught daily in connection with classroom work.
- (b) Once a week, study of special rules in connection with composition. Twice a week, in second year, assignments in Bennett's Latin Grammar.
- (c) Constant practice in grammatical principles is had by all of the advanced classes in connection with the text.
- (d) During some part of each year, there is a review of grammatical forms, regular and irregular. Grammatical constructions are noted constantly as they occur in the reading.

TABLE 58
COMPARISON OF EFFICIENCY IN KNOWLEDGE
OF CONSTRUCTION
SUMMARY

YEAR I		
Group	Method	Latin Grammar Test
I	AI	.75
	BI	
	BII	
II	CII	1.47
III	CIII	.88
YEAR II		
I	AI	1.58
	BI	
	BII	
II	CII	1.61
III	CIII	1.46
YEAR III		
I	AI	2.10
	BI	
	BII	
II	CII	2.35
III	CIII	2.04
YEAR IV		
I	AI	2.03
	BI	
	BII	
II	CII	2.38
III	CIII	2.41

(e) For each of these upper years: Review of declensions and conjugations. Syntax in connection with text read.

(f) All classes above freshmen are provided with grammars and use them continually for reference work.

(g) Daily exercises in grammar in connection with the constructions of the text.

Tables 54-57 set forth the essential facts. Table 58 gives a summary of them. It is apparent that in the case of the first year in grammar, the schools of Group I give about as good a result as those in Group III. Group II shows a better result than Group III, but it is also better than Group I. In the second year the schools of Group I are about the same as those of both of the other groups in grammar. In the third year the results in Group I are better than the results in Group III, but Group I falls slightly below Group II. In the fourth year there is no very great difference in the results in these groups. In grammar, Group I stands slightly lower than either of the other two groups.

In the above statement the results for the first year should not be taken too seriously, for the reason that the standings of two schools in Group I are absent.

CONCLUSIONS CONCERNING TIME DEVOTED TO GRAMMAR

Here seems to be a perfectly clear case concerning the justifiability of the large amount of time given to the teaching of grammar in the schools represented in Group III. There is not enough difference anywhere between Groups I, II and III to warrant saying that one has any particular superiority. In other words, pupils have no greater mastery of grammar in those schools which teach the grammatical method in the first year in its extreme form, which have a systematic study of grammar in connection with weekly exercises in prose composition, and which give daily attention to syntax, with constant use of a text book on grammar, along with the study of Latin authors. In view of this fact, the large amount of the pupils' time and the teachers' effort given to the direct study of grammar is unjustifiable. Here is an important source of waste in teaching.

Our observation of the work of these eight schools convinces us that results in ability to get the thought of the Latin, which are so

meager, would be less so if a shift of emphasis should be made from grammar to translation or reading of Latin. In a good many schools, half the time of the recitation period is often spent in discussing the minutiae of form and syntax, which according to the evidence contributes almost nothing to either ability to translate or read, or knowledge of construction. It is moderate language, then, to say that the waste here is extravagant. Public funds are literally being thrown away in the expenditure of this large amount of time and effort which results in nothing of value.

If we now refer to Table 53, we shall see that of the schools which comprise the lowest half in time, only two are schools of Group III. Only two of these eight schools which devote most time to grammar have a time allotment lower than that of the middle school in Table 53 and none stands in the lowest one-fourth as regards time. It is true that seventy-five per cent of the schools of Group III are in the two highest groups in amount of time devoted to the subject, and one hundred per cent are in the three highest groups as shown by Table 53. We have here a good indication of the location of the waste which takes place in those schools which devote an excessively large amount of time to Latin and secure no better results than other schools which devote much less time to it.

CHAPTER XII

RELATION BETWEEN ABILITY TO APPREHEND THE MEANING OF LATIN AND KNOWLEDGE OF CONSTRUCTION

The question of the relationship of knowledge of construction and the ability to get the thought of Latin was one of the important problems connected with this investigation. Do the schools which are best in knowledge of construction on the part of their pupils rank highest in ability to grasp the meaning of Latin? The schools in each year were arranged in four groups in order of efficiency in the Connected Latin Test, as shown in Tables 59-61. In Table 62 the group averages are shown by years, and it appears from these that in each of the years there is, in general, a very slight improvement in grammar from Group I to Group IV.

There seems to be a very clear case in this aspect of the study. The schools of Group IV in each of the three years are conspicuously more efficient in ability to apprehend the meaning of Latin. But they are in every case only slightly more efficient in grammar. For example, in the fourth year the difference in ability in grammar between Group I and Group IV is represented by the ability to answer correctly eight more constructions in Group IV than could be done in Group I. Nearly similar statements might be made in most of the groups in each year. Plainly the superior ability in getting the thought of the Latin on the part of the schools in Group IV in each year is not accompanied by marked superiority in grammar. When we examine Tables 59-61, it is evident that there is no hard and fast connection between knowledge of grammar and ability to get the thought of Latin.

The fact that a school stands high in construction does not necessarily insure a high standing in ability to get the thought from the Latin. Schools with high and low scores in grammar are found in all divisions.

The final conclusion of this whole problem is that a high score in knowledge of construction does not necessarily insure a correspondingly great ability to apprehend the thought of the Latin

TABLE 59
RELATION BETWEEN ABILITY TO APPREHEND
THE MEANING OF LATIN AND KNOWLEDGE OF CONSTRUCTION
YEAR II

Group	School	Connected Latin Test	
		Amount Correct	Comprehension
			Latin Grammar Test
I	9	7.65	12
	26	7.67	9
	6	12.28	16
	17	12.99	29
	3	13.79	26
	23	16.86	24
	4	18.21	25
	Average of all pupils.....	13.54	22
	2	19.02	26
	20	19.33	33
II	14	21.99	36
	16	22.11	41
	18	22.14	23
	31	22.83	27
	24	23.61	24
	Average of all pupils.....	23.19	31
	19	26.69	38
III	12	27.14	35
	7	27.75	34
	10	28.04	43
	21	31.81	40
	1	32.79	43
	25	34.21	41
	Average of all pupils.....	30.16	38
IV	30	35.38	48
	34	35.43	54
	27	38.42	68
	22	41.64	53
	15	58.04	65
	5	60.86	72
	29	73.40	65
	Average of all pupils.....	51.64	58

rapidly and accurately, although there is some correspondnce, in general, with exceptions in particular cases.

Nearly all schools which teach Latin, as previously pointed out, spend about a fifth of their time teaching prose composition, not

TABLE 60
RELATION BETWEEN ABILITY TO APPREHEND
THE MEANING OF LATIN AND KNOWLEDGE OF CONSTRUCTION
YEAR III

Group	School	Connected Latin Test		Latin Grammar Test
		Amount Correct	Comprehension	
I	20	11.38	36	1.65
	9	19.91	28	2.19
	10	22.12	37	2.34
	26	23.40	31	2.28
	2	25.38	21	1.92
	21	26.70	30	2.13
	31	28.33	48	2.30
	Average of all pupils.....	20.98	32	2.17
II	14	29.63	31	.23
	3	30.22	71	1.82
	18	32.20	28	1.66
	16	35.23	61	2.57
	22	35.48	46	2.91
	4	37.38	39	2.07
	25	38.11	48	2.10
	Average of all pupils.....	32.16	39	2.14
III	27	39.09	42	1.75
	12	40.56	49	2.52
	23	43.94	45	1.72
	17	43.99	60	1.46
	6	44.51	38	1.64
	29	44.73	56	3.01
	30	45.55	59	2.61
	Average of all pupils.....	44.00	48	1.87
IV	19	46.60	44	2.67
	1	48.12	55	2.00
	15	52.84	92	2.67
	7	55.28	34	1.66
	5	56.70	68	2.76
	34	56.78	51	2.59
	24	57.92	56	2.52
	Average of all pupils.....	55.19	54	2.32

because they expect that their pupils will ever have occasion to write anything in Latin after they get out of school, but in order that they may better understand the constructions of the language and thereby be able to read or translate Latin better. It is very

TABLE 61
RELATION BETWEEN ABILITY TO APPREHEND
THE MEANING OF LATIN AND KNOWLEDGE OF CONSTRUCTION
YEAR IV

Group	School	Connected Latin Test Amount Correct	Compre- hension	Latin Grammar Test
I	27	21.58	53	2.14
	9	21.74	48	2.08
	3	23.65	25	1.74
	26	27.63	45	1.96
	18	31.38	26	1.23
	16	33.32	63	2.07
	31	34.06	62	2.26
	Average of all pupils.....	28.19	44	1.93
	4	37.47	33	2.33
	20	38.92	51	3.10
II	21	42.73	36	2.03
	12	43.03	43	2.77
	2	43.24	48	2.06
	23	45.34	44	2.18
	Average of all pupils.....	43.00	40	2.29
III	6	45.62	42	1.50
	24	49.30	46	2.27
	19	49.50	46	2.76
	22	51.57	65	2.73
	17	52.21	56	1.91
	10	53.09	67	2.65
	25	54.39	61	2.74
	Average of all pupils.....	51.17	53	2.33
IV	30	58.71	70	2.74
	5	60.72	70	3.15
	34	63.20	84	2.79
	15	65.12	68	2.99
	7	70.86	58	2.46
	1	70.89	80	2.72
	29	73.51	95	3.34
	Average of all pupils.....	65.25	73	2.84

clear, from a study of many papers, that a pupil may be so taught and drilled in grammar that he can translate very correctly datives and ablatives and subjunctives, and be able to describe and classify Latin constructions with ability, but yet may not be a good thought-

TABLE 62
RELATION BETWEEN ABILITY TO APPREHEND
THE MEANING OF LATIN AND KNOWLEDGE OF CONSTRUCTION
SUMMARY

Group	Connected Amount Correct	Latin Test Comprehension	Latin Grammar Test
YEAR II			
I	13.54	22	1.20
II	23.19	31	1.30
III	30.16	38	1.90
IV	51.64	58	2.15
YEAR III			
I	20.98	32	2.17
II	32.16	39	2.14
III	44.00	48	1.87
IV	55.19	54	2.32
YEAR IV			
I	28.19	44	1.93
II	43.00	40	2.29
III	51.17	53	2.33
IV	65.25	73	2.84

getter when he is confronted with an easy connected passage of Latin to translate. What, now, shall we say concerning the practice of spending so large an amount of time for three years on prose composition for the purpose of clarifying and fixing principles of grammatical construction? What shall we say concerning the tendency in one-third of the schools to spend a considerable amount of time and in another third to devote a very large amount of time to direct teaching of grammar? The facts serve only to strengthen the conviction stated in an earlier chapter that the excessive amount of time and attention given to grammar is an unwise and wasteful practice.

CHAPTER XIII

ABILITY IN THE FUNDAMENTALS OF LATIN IN RELATION TO TIME DEVOTED TO LATIN STUDY

It seems desirable at this point to inquire into the exact relationship of the amount of time devoted to Latin and the results secured by the various schools.

ARRANGEMENT OF SCHOOLS

In setting forth the facts in connection with this problem, the schools in each year were arranged in three groups. The schools were arranged in order of the time devoted to the subject. The relationship of time allotments and ability to get the thought of the Latin may be seen by inspection of Tables 63-67.

CONCLUSION CONCERNING TIME DEVOTED TO LATIN AND EFFICIENCY

It appears from the tables in which the results are set forth that there are somewhat better results on the whole in those schools which devote most time to the subject. This, of course, would be expected. The important question is: Are the results proportionate to the larger time allotments? For example, in the first year the schools of Group III devote 229 minutes more a week to Latin than do the schools of Group I. It appears that the results, however, are only slightly better, not sufficiently superior to justify the larger time allotments. In each of the four years, the schools of Group III devote to Latin about 200 minutes more per week than do those of Group I. It is clear throughout each of these years that the results in the three aspects of Latin ability measured are not sufficiently greater to warrant the increase in time. In other words, it seems probable that the schools of Group III are squandering a good deal of time. Results are just about as good with the

smaller time allotments. This should serve as an indication to the schools of this group that they should reduce the amount of time devoted to the subject and improve their methods of instruction.

TABLE 68
TIME ALLOTMENTS AND EFFICIENCY
FOR PUPILS WHO HAVE STUDIED LATIN ONE YEAR

Group	School	Number of Minutes Per Week Devoted to Study of Latin for One Year	Latin Grammar Test	Latin Sentence Test B
I	17	300	.07	3.41
	31	305	.87	3.44
	19	350	.50	3.02
	33	350	1.76	3.50
	21	375	.60	3.05
	6	390	.28	2.76
	3	390	.56	3.23
	4	390	1.16	4.61
	34	400	2.24	3.70
	Average	361	.73	3.28
II	26	415	.90	2.35
	32	415	.50	3.63
	29	425	1.72	3.63
	16	440	1.20	3.76
	24	450	1.25	3.24
	14	450	.37	3.25
	1	500	.30	2.03
	23	500	.46	3.51
	10	500	1.09	3.94
	Average	455	.96	3.51
III	12	500	.87	3.00
	27	520	.16	3.06
	9	525	.36	3.20
	22	550	1.69	3.38
	5	575	2.33	3.83
	11	600	1.12	3.41
	20	600	1.20	4.11
	7	640	.91	2.87
	13	800	1.37	3.51
	Average	590	1.46	3.28

TABLE 64
TIME ALLOTMENTS AND EFFICIENCY
FOR PUPILS WHO HAVE STUDIED LATIN TWO YEARS

Group	School	Number of Minutes Per Week Devoted to Study of Latin for Two Years	Latin Grammar Test	Latin Sentence Test B	Connected Latin Test Amount Correct	Compre- hension
I	2	240	1.27	3.99	19.02	26
	17	313	1.17	3.99	12.99	29
	31	338	1.63	3.93	22.83	27
	19	375	1.98	3.47	26.69	38
	15	380	3.01	5.29	58.04	65
	6	395	1.16	3.35	12.28	16
	3	403	1.49	2.46	13.79	26
	21	413	2.17	4.25	31.81	40
	16	440	1.22	4.25	22.11	41
	18	450	.92	3.83	22.14	23
	Average	375	1.36	4.04	26.11	36
	34	450	2.29	4.23	35.43	54
	14	450	.59	3.84	21.99	36
	26	453	1.29	3.19	7.67	9
	29	463	2.29	5.41	73.40	65
II	4	483	1.64	3.38	18.21	25
	25	488	1.85	4.10	34.21	41
	24	500	2.39	3.95	23.61	24
	1	500	1.66	5.38	32.79	43
	23	500	1.05	3.82	16.86	24
	10	500	1.73	6.05	28.04	43
	Average	478	1.64	4.01	27.24	34
	30	510	1.86	4.15	35.38	48
	27	520	.85	4.84	38.42	68
	9	525	1.18	3.57	7.65	12
III	22	525	2.07	4.69	41.64	53
	12	525	2.35	4.10	27.14	35
	11	570	2.09	4.52	....	....
	5	575	2.79	4.42	60.86	72
	20	600	1.81	4.43	19.33	33
	7	648	1.09	3.52	27.75	34
	13	800	1.72	3.99	38.00	36
	Average	580	1.95	4.22	30.54	40

TABLE 65
TIME ALLOTMENTS AND EFFICIENCY
FOR PUPILS WHO HAVE STUDIED LATIN THREE YEARS

Group	School	Number of Minutes Devoted to Study of Latin for Three Years	Latin Grammar Test	Latin Sentence Test B	Connected Latin Test Amount Correct	Compre- hension
I	2	240	1.92	3.61	25.38	21
	17	359	1.46	4.84	43.99	60
	19	384	2.67	4.75	46.60	44
	15	387	2.67	4.27	52.84	92
	31	389	2.30	4.79	28.33	48
	6	394	1.64	4.48	44.51	38
	3	407	1.82	3.51	30.22	71
	21	425	2.13	4.46	26.70	30
	18	450	1.66	4.35	32.20	28
	14	450	.23	4.75	29.63	31
	Average	389	1.84	4.50	38.09	50
	16	452	2.57	5.01	35.23	61
	26	465	2.28	4.58	23.40	31
	34	467	2.59	4.20	56.78	51
	24	483	2.52	4.90	57.92	56
II	1	500	2.00	5.22	48.12	55
	23	500	1.72	4.52	43.94	45
	29	500	3.01	6.04	44.73	56
	10	500	2.34	4.49	22.12	37
	25	515	2.10	4.77	38.11	48
	27	520	1.75	5.75	39.09	42
	Average	490	2.30	4.80	39.20	46
	9	525	2.19	4.04	19.91	28
	22	534	2.91	4.81	35.48	46
	4	540	2.07	4.35	37.38	39
III	30	549	2.61	4.38	45.55	59
	12	550	2.52	4.71	40.56	49
	5	575	2.76	5.14	56.70	68
	20	600	1.65	4.83	11.38	36
	11	605	2.24	4.52	....	....
	7	639	1.66	4.27	55.28	34
	13	800	2.70	5.40	67.02	62
	Average	592	2.27	4.58	36.93	41

TABLE 66
TIME ALLOTMENTS AND EFFICIENCY
FOR PUPILS WHO HAVE STUDIED LATIN FOUR YEARS

Group	School	Number of Minutes Per Week Devoted to Study of Latin for Four Years	Latin Grammar Test	Latin Sentence Test B	Connected Latin Test Amount Correct	Latin Test Compre- hension
I	2	240	2.06	4.95	43.24	48
	19	388	2.76	4.41	49.50	46
	15	390	2.99	5.39	65.12	68
	17	393	1.91	4.86	52.21	56
	6	393	1.50	4.43	45.62	42
	21	402	2.03	3.89	42.73	36
	31	413	2.26	5.19	34.06	62
	3	418	1.74	4.30	23.65	25
	16	445	2.07	4.85	33.32	63
	18	450	1.23	4.31	31.38	26
	Average	393	1.98	4.74	41.64	45
	24	463	2.27	4.66	49.30	46
	14	...	...	4.28	44.73	53
	26	471	1.96	4.15	27.63	45
	34	475	2.79	5.13	63.20	84
II	I	500	2.72	5.34	70.89	80
	23	500	2.18	5.02	45.34	44
	29	519	3.34	5.93	73.51	95
	27	520	2.14	4.87	21.58	53
	25	522	2.74	5.14	54.39	61
	9	525	2.08	4.99	21.74	48
	Average	496	2.40	4.88	45.21	59
	22	537	2.73	4.98	51.57	65
	10	538	2.65	5.24	53.09	67
	20	565	3.10	5.60	38.92	51
III	30	565	2.74	5.21	58.71	70
	4	569	2.33	4.46	37.47	33
	5	575	3.15	5.80	60.72	70
	12	575	2.77	4.56	43.03	43
	7	580	2.46	5.47	70.86	58
	11	623	2.82	5.88	....	....
	13	790	2.66	5.77	85.23	66
	Average	592	2.75	5.21	54.53	56

TABLE 67
TIME ALLOTMENTS AND EFFICIENCY
SUMMARY
GROUP AVERAGES

Group	Average Number of Minutes Per Week Devoted to Latin Study	Latin Grammar Test	Latin Sentence Test B	Connected Latin Test Amount Correct	Compre- hension
YEAR I					
I	361 ¹	.73	3.28	....	..
II	455	.96	3.51	....	..
III	590	1.46	3.28	....	..
YEAR II					
I	375	1.36	4.04	26.11	36
II	478	1.64	4.01	27.24	34
III	580	1.95	4.22	30.54	40
YEAR III					
I	389	1.84	4.50	38.09	50
II	490	2.30	4.80	39.20	46
III	592	2.27	4.58	36.93	41
YEAR IV					
I	393	1.98	4.74	41.64	45
II	496	2.40	4.88	45.21	59
III	592	2.75	5.21	54.53	56

¹ These figures are the averages for one, two, three and four years respectively.

In the facts brought out here, is another illustration of the fact that satisfactory results do not depend so much upon long periods as upon skillful instruction. These schools which get excellent results on relatively small time allotments have adopted methods of instruction which are capable of securing a given result with the least expenditure of time and teaching effort, which constitutes the real essence of economy in education.

CHAPTER XIV

EVALUATION OF METHOD IN LATIN INSTRUCTION

EVALUATION OF METHOD

Now the important problem in connection with method is to see what the effect of each different kind of procedure in teaching is upon the performance of the pupils. In other words, we need to evaluate the various methods in terms of the ability of the pupils. Does any one type of procedure appear to produce any superiority on the part of the pupils, in ability to grasp the thought of Latin rapidly and intelligently?

SCHOOLS CHOSEN FOR COMPARISON

Out of the entire number of schools, twenty-four were chosen for purposes of comparison of methods. There were some schools in the case of which no comparison would be fair. For example, in the case of a school in which the teaching was poor on account of the inferiority of the teacher it would not be fair to make a comparison with a school in which the teacher was of superior ability. In the former school the best of methods would give a poor result. Comparisons of method would be fair only in schools in which the same method had been in use during the time that the highest class had been in school. The twenty-four schools which were chosen presented conditions which were similar and comparable to a sufficient degree so that the results of such a comparison are valid and fair. In each of the three method groups the schools which were chosen represent the respective methods at their best. In other words, the results secured from these methods in these schools would be expected to be duplicated in any group of schools under normal conditions.

In Tables 68-71, the schools are classified according to the methods which they use. It is possible to make three groups on this basis. In Table 72 is given a summary of the facts in the form of averages of the groups. These figures are a clear indication that

in general the translation method is adequate. In each of the three years above the first the schools of Group I give a better result in amount correct in the Connected Latin Test. The superiority of the

TABLE 68
COMPARISON OF DIFFERENT METHODS
FOR ABILITY IN THE FUNDAMENTALS OF LATIN
Class Averages
YEAR I

Group	Method	School	Latin Sentence Test B	Latin Grammar Test	Latin Vocabulary Test
I	AI	6	2.76	.28	3.16
	AI	2	3.42	.47	3.33
	AI	19	3.02	.50	...
	AI	18	3.32	...	3.16
	AI	15	...	...	...
	BI	24	3.24	1.25	...
	BII	29	3.63	1.72	...
	BII	30	2.80	.71	...
	Average of all pupils.....		3.13	.75	3.20
	CH	5	3.83	2.33	4.02
II	CH	13	3.51	1.37	3.78
	CH	1	2.03	.30	3.65
	CH	10	3.94	1.09	3.65
	CH	3	3.23	.56	...
	CH	31	3.44	.87	...
	CH	25	3.96	2.24	...
	CH	16	3.76	1.20	...
	Average of all pupils.....		3.65	1.47	3.86
III	CH	12	3.00	.87	...
	CH	9	3.20	.36	...
	CH	7	2.87	.91	3.20
	CH	14	3.25	.37	3.51
	CH	4	4.61	1.16	3.82
	CH	22	3.38	1.69	...
	CH	26	2.35	.90	2.99
	CH	27	3.06	.16	...
Average of all pupils.....			3.13	.88	3.23

schools in Group I over those in Group III is evident in all of the three years in this particular. On the basis of these figures we are justified in asserting that the translation method appears on the

whole to give considerably better results in the schools in which it is in use than does the grammatical method in the schools in which it is used as far as the amount of Latin interpreted correctly is con-

TABLE 69
COMPARISON OF DIFFERENT METHODS
FOR ABILITY IN THE FUNDAMENTALS OF LATIN

Class Averages

YEAR II

Group	Method	School	Connected Latin Test					
			Amount Attempted	Amount Correct	Comprehension	Latin Sentence Test B	Latin Grammar Test	Latin Vocabulary Test
I	A I	6	77.68	12.28	16	3.35	1.16	3.71
	A I	2	75.67	19.02	26	3.99	1.27	4.07
	A I	19	69.27	26.69	38	3.47	1.98	....
	A I	18	98.69	22.14	23	3.83	.92	3.97
	A I	15	88.81	58.04	65	5.29	3.01	....
	B I	24	99.58	23.61	24	3.95	2.39	....
	B II	29	112.61	73.40	65	5.41	2.29	....
	B II	30	74.07	35.38	48	4.15	1.86	....
	Average of all pupils		89.99	35.13	39	3.95	1.58	3.34
	C II	5	84.16	60.86	72	4.42	2.79	....
II	C II	13	103.09	38.00	36	3.99	1.72	4.11
	C II	1	76.87	32.79	43	5.38	1.66	4.52
	C II	10	65.70	28.04	43	6.05	1.73	3.44
	C II	3	53.78	13.79	26	2.46	1.49	....
	C II	31	84.89	22.83	27	3.93	1.63	....
	C II	25	83.29	34.21	41	4.10	1.85	....
	C II	16	54.14	22.11	41	4.25	1.22	....
	Average of all pupils		72.77	30.88	43.11	4.23	1.61	3.90
III	C III	12	77.94	27.14	35	4.10	2.35	....
	C III	9	65.15	7.65	12	3.57	1.18	....
	C III	7	82.53	27.75	34	3.52	1.09	3.89
	C III	14	61.02	21.99	36	3.84	.59	3.35
	C III	4	73.46	18.21	25	3.38	1.64	3.65
	C III	22	78.71	41.64	53	4.69	2.07	....
	C III	26	79.30	7.67	9	3.19	1.29	3.23
	C III	27	56.45	38.42	68	4.84	.85	....
Average of all pupils			72.40	24.16	30	3.81	1.46	3.48

cerned. Of course, there are exceptions to this statement in the case of individual schools. With reference to comprehension, Group

I shows a result superior to Group III in each of the three years. On the other hand, in Group II, the results are slightly higher than those in Group I in two cases.

TABLE 70
COMPARISON OF DIFFERENT METHODS
 FOR ABILITY IN THE FUNDAMENTALS OF LATIN
 Class Averages
 YEAR III

Group	Method	School	Connected Latin Test				Latin Grammar Test	Latin Vocabulary Test
			Amount Attempted	Amount Correct	Comprehension	Sentence Test B		
I	A I	6	115.89	44.51	38	4.48	1.64	4.05
	A I	2	119.67	25.38	21	3.61	1.92	4.14
	A I	19	105.46	46.60	44	4.75	2.67	....
	A I	15	57.67	52.84	92	4.27	2.67	....
	A I	18	116.42	32.20	28	4.35	1.66	4.14
	B I	24	103.57	57.92	56	4.90	2.52	....
	B II	29	79.33	44.73	56	6.04	3.01	....
	B II	30	77.25	45.55	59	4.38	2.61	....
	Average of all pupils		101.01	45.32	51	4.39	2.10	4.12
	C II	5	83.00	56.70	51	5.14	2.76	....
II	C II	13	108.91	67.02	62	5.40	2.70	....
	C II	1	85.15	48.12	55	5.22	2.00	4.47
	C II	10	60.55	22.12	37	4.49	2.34	4.25
	C II	3	42.50	30.22	71	3.51	1.82	....
	C II	31	58.56	28.33	48	4.79	2.30	....
	C II	25	80.22	38.11	48	4.77	2.10	....
	C II	16	58.18	35.23	61	5.01	2.57	....
	Average of all pupils		74.19	41.42	50	4.80	2.35	4.28
III	C III	12	82.56	40.56	49	4.71	2.52	....
	C III	9	72.10	19.91	28	4.04	2.19	....
	C III	7	164.95	55.28	34	4.27	1.66	4.49
	C III	14	94.96	26.93	31	4.75	.23	4.16
	C III	4	96.60	37.38	39	4.35	2.07	4.20
	C III	22	76.72	35.48	46	4.81	2.91	....
	C III	26	74.40	23.40	31	4.58	2.28	4.02
	C III	27	92.18	39.09	42	5.75	1.75	....
Average of all pupils			93.16	36.21	38	4.51	2.04	4.25

In the other aspects of Latin ability the adequacy of the translation method is evident. In Table 72, in connection with ability to

translate Latin sentences, there is no case in which the translation method is not practically as adequate as the grammatical method. There is not difference enough between the results of any of the

TABLE 71
COMPARISON OF DIFFERENT METHODS
FOR ABILITY IN THE FUNDAMENTALS OF LATIN
 Class Averages
 YEAR IV

Group	Method	School	Connected Latin Test					Latin Vocabulary Test
			Amount Attempted	Amount Correct	Comprehension	Sentence Test B	Latin Grammar Test	
I	A I	6	108.92	45.62	42	4.43	1.50	3.92
	A I	2	90.71	43.24	48	4.95	2.06	4.48
	A I	19	107.18	49.50	46	4.41	2.76	....
	A I	18	120.15	31.38	26	4.31	1.23	3.97
	A I	15	95.94	65.12	68	5.39	2.99	....
	B I	24	106.05	49.30	46	4.66	2.27	....
	B II	29	77.38	73.51	95	5.93	3.34	....
	B II	30	83.88	58.71	70	5.21	2.74	....
	Average of all pupils		103.41	54.12	57	4.72	2.03	4.14
	C II	5	87.29	60.72	70	5.80	3.15	4.56
II	C II	13	129.77	85.23	66	5.77	2.66	4.23
	C II	1	88.49	70.89	80	5.34	2.72	4.41
	C II	10	78.84	53.09	67	5.24	2.65	4.10
	C II	3	95.16	23.65	25	4.30	1.74	....
	C II	31	55.18	34.06	62	5.19	2.26	....
	C II	25	88.65	54.39	61	5.14	2.74	....
	C II	16	52.98	33.32	63	4.85	2.07	....
	Average of all pupils		83.45	50.99	61	5.17	2.38	4.35
	C III	12	99.71	43.03	43	4.56	2.77	....
	C III	9	45.22	21.74	48	4.99	2.08	....
III	C III	7	121.86	70.86	52	5.47	2.46	4.15
	C III	14	84.18	44.73	53	4.28	....	4.02
	C III	4	113.36	37.47	33	4.46	2.33	4.21
	C III	22	79.61	51.57	65	4.98	2.73	....
	C III	26	61.93	27.63	45	4.15	1.96	4.12
	C III	27	40.54	21.58	53	4.87	2.14	....
	Average of all pupils		78.87	38.23	47	4.70	2.41	4.12

methods to warrant the statement that one is in any marked degree superior as far as the ability to translate sentences goes. In gram-

mar and vocabulary, the translation method gives, on the whole, as good a result, although there are a few cases in which the grammatical method shows a slightly better average. In these aspects of

TABLE 72
COMPARISON OF DIFFERENT METHODS
FOR ABILITY IN THE FUNDAMENTALS OF LATIN
SUMMARY

YEAR I							
Group	Method	Connected Latin Test			Latin Sentence Test B	Latin Grammar Test	Latin Vocabulary Test
		Amount Attempted	Amount Correct	Comprehension			
I	A I	....	....	....	3.13	.75	3.20
	B I						
	B II						
II	C II	....	....	....	3.65	1.47	3.86
III	C III	....	....	....	3.13	.88	3.23
YEAR II							
I	A I	89.99	35.13		3.95	1.58	3.34
	B I						
	B II						
II	C II	72.77	30.88	43	4.23	1.61	3.90
III	C III	72.40	24.16	30	3.81	1.46	3.48
YEAR III							
I	A I	101.01	45.32	51	4.39	2.10	4.12
	B I						
	B II						
II	C II	74.19	41.42	50	4.80	2.35	4.28
III	C III	93.16	36.21	38	4.51	2.04	4.25
YEAR IV							
I	A I	103.41	54.12	57	4.72	2.03	4.14
	B I						
	B II						
II	C II	83.45	50.99	61	5.17	2.38	4.35
III	C III	78.87	38.23	47	4.70	2.41	4.12

Latin ability, as far as the result itself is concerned, no method has any marked advantage.

METHOD IN RELATION TO TIME ALLOTMENTS.

The demands for economy of time in education are now so insistent that it is necessary to examine all types of procedure in teaching with strict reference to their time requirements. Of two methods, that which can secure the same or a better result with less

TABLE 78
COMPARISON OF DIFFERENT METHODS
IN RELATION TO TIME ALLOTMENTS
Class Averages
YEAR I

Group	Method	School	Number of Minutes Per Week Devoted to Study of Latin for One Year
I	A I	6	390
	A I	2	240
	A I	19	350
	A I	18	450
	A I	15	370
	B I	24	450
	B II	29	425
	B II	30	485
	Average		395
	C II	5	575
II	C II	13	800
	C II	1	500
	C II	10	500
	C II	3	390
	C II	31	305
	C II	25	450
	C II	16	440
	Average		495
III	C III	12	500
	C III	9	525
	C III	7	640
	C III	14	450
	C III	4	390
	C III	22	550
	C III	26	415
	C III	27	520
	Average		499

time, other things being equal, will have to be regarded as better. In view of this fact, it becomes an important part of this investigation to examine the different methods in use with reference to

TABLE 74
COMPARISON OF DIFFERENT METHODS
IN RELATION TO TIME ALLOTMENTS
Class Averages
YEAR II

Group	Method	School	Number of Minutes Per Week Devoted to Study of Latin for Two Years
I	AI	6	395
	AI	2	240
	AI	19	375
	AI	18	450
	AI	15	380
	BI	24	500
	BII	29	463
	BII	30	510
	Average		414
	CII	5	575
II	CII	13	800
	CII	1	500
	CII	10	500
	CII	3	403
	CII	31	338
	CII	25	488
	CII	16	440
	Average		506
III	CIII	12	525
	CIII	9	525
	CIII	7	648
	CIII	14	450
	CIII	4	483
	CIII	22	525
	CIII	26	453
	CIII	27	520
	Average		516

the amount of time necessary to produce a given result. In Tables 73-76 the time allotments for each school are given and the schools

are classified according to method. A summary of the facts is given in Table 77.

TABLE 75
COMPARISON OF DIFFERENT METHODS
IN RELATION TO TIME ALLOTMENTS
Class Averages
YEAR III

Group	Method	School	Number of Minutes Per Week Devoted to Study of Latin for Three Years
I	AI	6	394
	AI	2	240
	AI	19	384
	AI	18	450
	AI	15	387
	BI	24	483
	BII	29	500
	BII	30	549
	Average		423
	CII	5	575
II	CII	13	800
	CII	1	500
	CII	10	500
	CII	3	407
	CII	31	389
	CII	25	515
	CII	16	452
	Average		517
III	CIII	12	550
	CIII	9	525
	CIII	7	639
	CIII	14	450
	CIII	4	540
	CIII	22	534
	CIII	26	465
	CIII	27	520
	Average		528

The evidence is unmistakably clear. The eight schools in Group I require an average of 105 minutes, or about one and three-fourths hours less per week for four years than do the eight schools in

Group III. These are respectively the translation method and the grammatical method. This figure is secured by taking the time allotments for four years, as given in Table 53.

TABLE 76
COMPARISON OF DIFFERENT METHODS
IN RELATION TO TIME ALLOTMENTS
Class Averages
YEAR IV

Group	Method	School	Number of Minutes Per Week Devoted to Study of Latin for Four Years
I	AI	6	393
	AI	2	240
	AI	19	388
	AI	18	450
	AI	15	390
	BI	24	463
	BII	29	519
	BII	30	565
	Average		426
II	CII	5	575
	CII	13	790
	CII	1	500
	CII	10	538
	CII	3	418
	CII	31	413
	CII	25	522
	CII	16	445
	Average		525
III	CIII	12	575
	CIII	9	525
	CIII	7	580
	CIII	14	469
	CIII	4	569
	CIII	22	537
	CIII	26	471
	CIII	27	520
	Average		531

Of the eight schools which use Method AI, BI, or BII, all but two stand in the lowest half as regards the average amount of time

spent on Latin for four years, as shown in Table 53. Four of these are in the lowest one-fourth, and in fact are the four lowest schools in the whole group of schools.

TABLE 77
COMPARISON OF DIFFERENT METHODS
IN RELATION TO TIME ALLOTMENTS
SUMMARY

Group	Method	Average Number of Minutes Per Week Devoted to Study of Latin
FOR ONE YEAR		
I	A I	395.00
	B I	
	B II	
II	C II	495.00
III	C III	499.00
FOR TWO YEARS		
I	A I	414.00
	B I	
	B II	
II	C II	506.00
III	C III	516.00
FOR THREE YEARS		
I	A I	423.00
	B I	
	B II	
II	C II	517.00
III	C III	528.88
FOR FOUR YEARS		
I	A I	426.00
	B I	
	B II	
II	C II	525.00
III	C III	531.00

In the first year, the schools of Group I take 104 minutes less time per week than the schools using the grammatical method. In the second year, the corresponding saving in time is 102 minutes, in the third year, 105 minutes, and in the fourth, 105. There is no great difference in the amount of class time spent in the two meth-

ods. In each year, the pupils who are taught by the translation method spend about 100 minutes per week less time studying Latin outside of class than do pupils taught by the grammatical method. Here is a substantial saving of time. A saving of 100 minutes a week for four years is eminently worth while. If the results are equally good by the translation method it will be clear evidence that learning is more economical and efficient by that type of procedure.

We have already presented evidence that the results by this method are practically as adequate, and now, when we take into consideration the fact that they are secured by conspicuously smaller time allotments, we have a clear justification of this method as compared with the grammatical method. We have also further proof of the futility and wastefulness of that plan of teaching which spends so large an amount of time learning paradigms and rules and gives so much attention to syntactical analysis of the Latin texts which are translated in class.

One of the interesting and rather significant facts in connection with this aspect of the investigation is the fact that the schools of Group I which devote least time to the study of Latin grammar in a formal way, and, in fact, least time to it in any way, with a conspicuously smaller time allotment in general, get on the whole as satisfactory results in Latin grammar. This is especially significant and is an indication of the source of the great waste which takes place in the teaching of Latin.

The Latin Grammar Test was omitted in two of the schools of Group I in the first year and so the results may not be valid. In the second year the schools of Group I get an average score of 1.58 in grammar, while the schools of Group III get only 1.46. Of course there is no great difference between these scores, but the point is that the schools which are putting special emphasis on formal grammar, devoting an excessive amount of time to it, and making it, in a large measure, the end and aim of their work, are getting no better results in this respect than the schools which place little or no direct emphasis on this phase of the work. In the third year, Group I averages slightly higher than Group III and in the fourth year Group III is a little higher than Group I, but in both third and fourth years there is no material difference between the

scores. On the basis of these facts we may say that the grammatical method, with all of its stress on formal teaching of grammar, secures no better result than the translation method with its smaller time allotment in general and its limited stress on the direct teaching of grammar.

CHAPTER XV

ONE OBSTACLE TO SUCCESS IN LATIN AND THE REMEDY

WIDE RANGE OF ABILITY IN CLASSES A HINDRANCE

There seems to be no doubt that the fact of the wide range of abilities found in practically all of the Latin classes at the present time is one of the important factors which contribute to the lack of results. The question immediately arises: Is this condition inevitable? It does not require a large amount of reflection to see that a very effective remedy has always been at hand, but, as in all other subjects previous to the advent of scientific measurement of results, we have been going on in a blind fashion and incidentally wasting an excessive amount of time and effort. With pupils of all degrees of ability in each of the three upper classes several conditions arise. In the first place, the pupils in the upper quarter of each class are able to translate five or six times as much Latin as those in the lowest quarter. If instruction is adapted to the middle half of the class, those in the lowest quarter can not do the work. As a result they fail for three years. This seems to be a rather long time to take to fail to do a thing. It is certainly a most wasteful procedure. A second result is that those in the upper quarter of the class are allowed to do perhaps only a quarter of what they are capable of doing. Here is an educational waste of the worst kind.

Table 78 sets forth graphically the extent of the overlapping in School 38. In Class II there are forty-two pupils, in Class III, twenty-two, and in Class IV, seventeen. All of the pupils in Class III fall within the range of Class II and could well be taught with that class as far as any differences in ability go. Three-fourths of all of the pupils of Class IV fall well down in the division of the scale assigned to Class II. It is evident that if we could select fourteen pupils from Class II, four from Class III and three from Class IV, we could make a new Class II which would be a compact, homogeneous group as far as ability to translate Latin goes. It would

TABLE 78
SHOWING PRESENT OVERLAPPING OF CLASSES AND
WAY IN WHICH PUPILS OUGHT TO BE CLASSIFIED ACCORDING TO ABILITY
FOR SCHOOL 38
BASED ON CONNECTED LATIN TEST

Class	Number of Pupils Who Scored the Number of Points Indicated on the Scale Below, in Amount Correct																	Total		
Classification of the pupils as they were in this school	II	8	3	3	6	2	4	3	5	6	1	....	1	....	....	....	....	....	42
	III	5	1	....	....	3	1	4	2	1	1	1	3	....	....	....	....	....	22
	IV	5	5	3	....	....	....	....	1	....	4	....	....	....	1	....	1	1	17
Classification of the same pupils as they should be arranged according to ability	I	18	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18
	II	...	4	6	6	5	....	....	....	....	....	....	....	....	....	....	....	....	21
	III	...	...	....	....	....	5	7	8	7	....	....	....	....	....	....	....	....	27
	IV	...	...	....	....	....	....	....	....	....	6	1	4	1	....	1	....	1	15
Scale of points for amount of Latin correct	0—4.99	5—9.99	10—14.99	15—19.99	20—24.99	25—29.99	30—34.99	35—39.99	40—44.99	45—49.99	50—54.99	55—59.99	60—64.99	65—69.99	70—74.99	75—79.99	80—84.99	85—89.99	90—94.99	95—99.99

require a rather specious skepticism on the part of anyone to say that these pupils would not do a great deal more effective work in a class together than as they are now. The same would be true of the other two classes.

The new arrangement of the three classes is shown in Table 78. There are eighteen pupils who ought either to drop Latin entirely or to go back to first year work. There are four pupils in the senior class who have extraordinary ability as compared with the others. They can probably be assigned additional Latin to be translated outside of class. All of the others form reasonably homogeneous groups as regards ability and can be profitably taught together.

In Table 79 are set forth the same facts for School 41, but the table is based on Latin Sentence Test A. It will be seen in this table that the group of pupils in the second year far overlaps the third year group, and both of these groups entirely overlap the group of fourth year pupils. The conspicuous lack of application of the principles of educational measurement and diagnosis in this school is so obvious that it does not need to be pointed out.

A SUGGESTED REMEDY

For the present we shall leave out of consideration any objections from an administrative point of view and suggest a plan for classification of pupils in Latin above the first year.

First, schools in which there are sixty pupils above the beginners should have three classes in Latin in addition to those doing first year work. These classes should be made up of pupils of approximately equal ability, on the basis of tests given at the beginning of the year, regardless of the length of time they have studied Latin. At the end of the first year of Latin, if a pupil proves to have sufficient ability, he should be placed in the highest group, even. He may remain in this group during the rest of the high school course. Consider for a moment the very much larger amount of Latin which he would translate in these three years in this group as compared with the amount he would get if he remained a year in the second group and a year in the third group. Probably he would translate more than five times as much. Undoubtedly he would cover in this group all of the Latin now taken in preparatory school and the first two years of college.

TABLE 79
SHOWING PRESENT OVERLAPPING OF CLASSES AND
WAY IN WHICH PUPILS OUGHT TO BE CLASSIFIED ACCORDING TO ABILITY
FOR SCHOOL 41
BASED ON LATIN SENTENCE TEST A

[illegible]

Such a plan would necessitate having on hand in each school enough Latin material so that pupils could spend three years in the highest group and not re-read anything. This would not be a difficult thing to do. According to this plan Latin tests will need to be given at least twice a year. Whenever pupils are found in any of the lower groups who have improved sufficiently, they should be placed at once in a higher class, i. e., in a class in which their rate of work will be up to their maximum ability. Only so can the greatest economy be secured.

Our present methods in Latin are not succeeding well with more than a quarter of our pupils and the chief reason is the failure to break away from traditional practices and apply the principles of modern scientific supervision and administration.

In a good many small high schools, the number of Latin classes is now limited to three by uniting the juniors and seniors and taking Cicero and Virgil in alternate years. In the plan suggested, a given pupil might never get beyond Class II. This would not be a serious matter if his ability never improved beyond that represented by that grade, for the group would have different Latin each year. Conceivably Class II and Class IV in a given school might be reading Virgil or Ovid or Livy at the same time, but the difference might be, in the case of Virgil, for example, that Class II would translate six books in a year and Class IV might do the same amount in two months and then pass on to something else. The real basis for dividing the whole group of Latin pupils in the school into divisions would be their ability to do work.

It should be stated at this point that this classification of pupils according to ability is sound and valid only on the assumption that their standing in this one test is a perfect criterion of their ability. This assumption, of course, is not strictly true. The writer is fully aware of the fact that the treatment of test results in classifying pupils is a subtle statistical matter which has not been handled adequately to date. But, assuming that by several adequate tests a true and valid measure of the ability of the pupils has been obtained, the idea has a great deal of force in its application to the classification of pupils in Latin in secondary schools.

Now, are there administrative reasons why this plan can not be adopted? Probably not. If school administration is to be for the sake of reducing educational waste and securing conditions under which learning may take place most favorably, it must find a way by which such a plan may be adopted.

CHAPTER XVI

COMPARATIVE STANDING OF PUPILS IN COLLEGE

Since in many respects the results of the teaching of Latin in the schools included in this investigation have been found to be poor, it might well be argued perhaps that these happened to be schools in which the work in Latin is poorer than in most schools. For this reason, it seemed desirable to determine the standing of the schools in question with as wide a range of other schools, both in and out of the State, as possible. Now, one means of determining the standard of a secondary school is to learn the relative standing of pupils who have gone to college from that school. This was done in connection with pupils from twenty of these schools. Of course, they went to many different colleges which have different methods of marking and different standards. The number who took Latin was small and no pupils from some schools took it in college. For these reasons the evidence is far from conclusive, but, on the other hand, it is believed to be of considerable value.

From the records collected annually by the State Department of Public Instruction it was possible to determine with entire accuracy how many pupils went to college in the fall of 1915 directly from the senior class of each of these schools, and the records also showed to what institutions they went. It was found that eighty-two pupils went to college directly from the senior classes of twenty of the schools involved in this test and that of these, thirty-nine took Latin in their freshman year. It was possible to learn the standings of thirty-five of these. The plan was to find the standing in Latin of each pupil from each school for his freshman year and the average standing in Latin of all freshmen in that college. This would enable us to know whether pupils from these schools were doing as well as students from all other high schools which sent students to these colleges. Table 80 gives the number of pupils from each secondary school who went to college, the colleges to which they went and their average rank in Latin for their freshman year in college.

TABLE 80
STANDING OF PUPILS IN COLLEGE

Number Who Went to Each of the Colleges Indicated Below with Their Average Rank in Latin for the First Year in College. The Figures in the Left Hand Column Under Each College Indicate the Number of Pupils Who Attended That College, and the Right Hand Figures Their Average Ranks in Latin.										
School	Wellesley	Boston University	Radcliffe	Mount Holyoke	Bowdoin	Amherst	Dartmouth	Bates	Smith	
26	1	2	..	..	..	..	3	1	91.5	..
16	6	G	..	..	..	..	73	..	..	..
23	1	..	..	..	..	..	55	..	..	..
18	2	..	..	..	..	..	2	..	..	..
14	1	..	..	95	..	..	55	..	..	..
22	2	G	..	..	..	..	..	..	..	..
21	5	..	..	..	..	..	2	3	78.3	..
24	..	..	..	..	..	..	65	..	..	..
21	2	..	..	..	1	..	..	..	..	1
25	..	..	..	..	65	..	..	..	..	70
3	..	..	..	..	..	..	..	..	..	..
2	6	1	..	1	..	..	..	1	85.5	2
19	..	G	..	70	..	..	..	..	..	90
30	4	..	1	88.7	..	..	1	..	..	85
5	1	..	..	..	..	..	65	..	..	..
15	..	..	..	..	..	..	..	..	..	..
1	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..
7	7	..	..	..	..	2	..	1	65	..
6	1	..	..	..	..	..	1	..	..	..
Average Rank in Latin of Pupils from Schools Concerned in This Investigation										
2	82	5	1	4	65	2	10	6	80	4
Average Rank of All Freshmen in Latin.....										
	74	F	B	72	72	73			50	
										72.5

In Radcliffe College letters are not translated into figures. A means highest honors; B, honors; C, fair; D, passing; E, failure. In Boston University the marking scale is: E, excellent; G, good; F, fair; P, poor; D, deficient. Vassar College refused to give the marks of the pupils. Colby College did not report, even after repeated requests.

It also gives the average rank of all freshmen in Latin. It will be noted that these are colleges which draw students from all parts of the country and for this reason the freshman averages are probably well representative of what the high schools of the country are doing in the development of ability to do college work in Latin. It will be seen that the results are entirely favorable to the schools of our investigation. There are only two cases in which graduates of these schools do not average higher than do all other freshmen taking Latin. While these data are not extensive enough to be entirely conclusive, yet it is believed that they are a good indication that the schools involved in the test are doing at least as good work in Latin as the average of the schools which are sending students to these colleges. Probably we are justified in concluding that the results which we have found would be likely to be duplicated in the same number of schools chosen at random in any other State. In other words, the results are apparently typical of Latin results everywhere.

It is clear that the results, insufficient as they may be, are highly favorable to the translation method. Schools 2 and 30, which together have ten pupils taking Latin in college, stand very high. School 18, however, draws a low rank for two pupils and School 6 does not stand especially high in the case of one pupil. Schools 26 and 14, both having one pupil, also stand high. School 7 teaches perhaps the most extreme form of the grammatical method of all schools in the list and it will be noted that it stands rather low for three pupils.

CHAPTER XVII

CHARACTER OF THE PUPILS' ENGLISH

A special study was made of the character of the English in what the pupils wrote. This was based on the Preliminary Connected Latin Test, so-called, given in 1916. Twenty-one schools participated in this test. To say that the English was poor gives little idea of the disconnected jumble of words which formed the greater part of a very large number of the papers. On the part of fully a quarter of the pupils, there seemed to be no idea of how to read a Latin sentence to get the correct thought and then to express that thought in reasonably good English. A very large number of the papers proved to be entirely meaningless. They were simply words put together with little or no reference to their meaning. It has been claimed that the study of Latin promotes logical thinking, power of exact statement, facility and precision in the use of English and similar abilities. There was no evidence in the papers of these pupils that this is true and an abundance of facts to prove the contrary, as far as the majority of the pupils were concerned. Of course there were exceptions. Some pupils wrote creditable English. A few schools were reasonably satisfactory in this respect. Generally, however, there was an amount of poor English in most of the papers such that, if the same degree of slovenliness and inaccuracy was allowed in the daily work in those schools, it would be sufficient largely to counteract the efforts of the school in all other classes in the direction of good expression. In about a fourth of the schools, as far as the papers of this test are an indication, Latin must be regarded as a study which is about as meaningless to the majority of the pupils as anything can be. What they wrote was to a large degree incoherent. In another large group, constituting nearly half of the schools, it had little meaning.

PRELIMINARY CONNECTED LATIN TEST

The test was chosen, with a few slight adaptations, from Caesar's Civil War. It is reproduced below:

CURIO'S CAMPAIGN IN AFRICA

Isdem temporibus C. Curio in Africam profectus ex Sicilia, etiam ab initio copias P. Atti Vari despiciens, duas legiones ex iv quas acceperat a Cæsare, d equites transportabat, biduoque et nocte in navigatione consumpta, appellit ad eum locum qui appellatur Anquillaria. Hic locus abest a Clupea passuum xxii milia, habetque non incommodam æstate stationem, et duobus eminentibus promunturiis continetur.

Curio Marcium Rufum Uticam cum classe præmittit; ipse eodem cum exercitu profiscitur biduique iter progressus ad flumen Bagradam pervenit. Ibi C. Caninium Rebilum legatum cum legionibus relinquit; ipse cum equitatu antecedit ad Castra exploranda Cornelia, quod is locus peridoneus castris habebatur. Id autem est iugum directum, eminens in mare, utraque ex parte præruptum atque asperum, sed tamen paulo leniore fastigio ab ea parte quæ ad Uticam vergit; abest directo itinere ab Utica paulo amplius passus mille.

Hoc explorato loco Curio castra Vari conspicit muro oppidoque coniuncta ad portam quæ appellatur Bellica, admodum munita natura loci, una ex parte ipso oppido Utica, altera theatro quod est ante oppidum.

His rebus gestis Curio se in castra ad flumen Bagradam recipit atque universi exercitus conclamatione imperator appellatur, posteroque die Uticam exercitum ducit et prope oppidum castra ponit. Nondum opere castrorum perfecto equites ex statione nuntiant magna auxilia equitum peditumque ab rege missa Uticam venire; eodemque tempore vis magna pulveris cernebatur, et vestigio temporis primum agmen erat in conspectu. Novitate rei Curio permotus præmittit equites qui primum impetum sustineant ac morentur; ipse celeriter ab opere deductis legionibus aciem instruit. Equitesque committunt proelium, et, priusquam plane legiones explicari et consistere possent, tota auxilia regis impedita ac perturbata, quod nullo ordine et sine timore iter fecerant, in fugam conciunt; equitatuque omni fere incolumi, quod se per litora celeriter in oppidum recipit, magnum peditum numerum interficiunt.

The twenty-one schools were arranged in three groups as regards the adequacy of the expression of the thought of the Latin in English. The following is the result:

Schools in Which the Expression of the Thought was Very Inadequate as Regards English	Schools in Which the Expression of the Thought was Poor as Regards English	Schools in Which the Expression was Good as Regards English
9	18	2 ²
21	1	7
31	14	13
2 ¹	5	15
26	24	6
22	19	36
	25	
	23	
	3	
	17	

¹ Year II only.

² Years III and IV only.

School 2 fell in two groups. The second year class, which had been taught by the direct method, was conspicuously poor in English, while the other classes did very well.

It is interesting to note that no school in which the pupils were taught by the translation method, falls in the group of schools in which the English expression is poorest. All of the schools in the group in which the English is most inadequate, with the exception of one class of School 2, teach the grammatical method. Of the five schools which teach the translation method, three are in the group in which the English is best and two are in the middle group.

Below are given in *italics* correct translations of a number of sections of the Latin of the test followed by characteristic English statements of the same thought found in the pupils' papers. These are simply a few examples chosen at random to illustrate the kind of inaccuracy found all through the papers of more than two-thirds of the schools.

At the same time Curio set out from Sicily into Africa.

At the same time C. Curio waging war in Africa from Sicily also.

For the same time C. Curio in Africa sent from Sicily and now by waging war.

At the time C. Curio in Africa having gone from Sicily.

At the same time C. Curo, a prefectur, in Africa from Sicily.

This—C. Curo in Africa from Sicilia to—.

It has in summer a convenient harbor. It is hemmed in by two projecting promontories.

He had not spent the summer at this station and he continued by two eminent promotions.

This place was not near a station, and by two eminent personages was continued.

They took up their station for summer; it contained two enemys.

The inhabitants had no real station.

He had no means of a guard in summer, and two being emitted he continued with the rest.

It was held by two eminent promotors.

It had not an insufficient summer station and was held by two generals.

He had not stationed commodations by summer, and by two eminent promuntaties he filled.

It is held by two prosperous tradesmen.

After two days and a night he landed at Anquilaria.

The cavalry was transported at Bidue and stayed in ships.

And the twelve night was taken up in navigation.

And by the middle of the night spent in navigation he called to this place which is called Anquillaria.

He having consumed the ships during the night he called to this place which they called A.

And twice by night in navigation went, he called to them which were called Anquillaria.

This was on account of his scorn of Varus' troops.

Also Publius Various from friendly aid.

And now by wageing war P. Atti Vari despised.

Also dispatching P. Attius Various.

The land P. Atti Vari describes.

Then he scattered the troops of Publius Attus Varrus.

From the beginning the forces of P. Attus Various dispersing.

Also Publius Atti Varius by beginning to desipline troops.

P. Atti Vari selecting troops from the forces.

And to the initial troops of P. Attuis Varius—

It is a straight ridge extending into the sea.

This however is a direct alliance, prominent in the sea, and fierce and barbarous in this part.

This however is eminent in ships, and also praeruptum from the part and aspered, but wearied by so great a leniore he hastened from this part to Uticam.

This also is directed, enemies on sea, and from a part waves and tide, but however having got a little way.

This however is East in direction prominent in the sea farther from this eruptive and wild part but nevertheless he approached slowly.

This thing however was given judgement, near to the seas and but nevertheless fatigue was small from those who had turned to Uticam.

to This yoke however he is directed going over the sea in all directions rough and storms but however.

This, however, is directly just, eminent in the sea and towers and aspires.

The other one directed the yokes, with the same slow steps he turned toward Uticam.

However in the direction of the march, embarking in a swamp and pushed on from other parts but nevertheless a little worn out.

Curio sent Rufus to Utica with the fleet.

He sent with this fleet Curio Marcium Rufum Uticam.

Curio Marciam Rufum Uticam with the class before stated—

Curuus Marcus Rufus was sent ahead to Utica with the class.

Curio Marcum belonged to the Rufum Uticam class.

The following are typical samples of the incoherent English found all through more than half of the papers, and show the kind of force, precision and exactness of statement, or rather the lack of these characteristics, which the study of Latin develops.

The same time C. Curio in Africa, went from Sicilia then from Sady P. Atti Vari,—two legions from IV—accepted by Caesar horses transported,—by night—to this place who was called Anquillaria.

Curio Marcium Rufum Uticam with ——. There C. Canuim Rebilum stayed with his army. But it was in the sea. But however from this part shortly.

The same time C. Curio from Sicilia from Africa two legions.

Curio Marcium Rufum Atticum when it was permitted to class himself with the same army progressed along.

At the same time C. Curio in Africa set out from Sicily, not by initiating the coupplies of P. Attit Vari to—, two legions from IV was accepted by Caesar, D the cavalry was transported, and by night and day, he called this place after Anquillaria.

SAMPLES OF PUPILS' PAPERS

Several samples of the pupils' work, consisting of complete papers, are reproduced on the following pages. Papers were chosen which are representative (1) of the best, (2) of those which are good and (3) of the poorest.

THE BEST PAPERS

Here are five which were among the best and which were very rare in any school. In fact, only a very few such papers were found in the entire group.

A. At the same time Carus Carius set out from Sicily into Africa, desiring to go from the beginning the troops of P. Attus Varus. He took with him two of Caesar's legions and 500 cavalry and he arrived at a place called Anquillaria in two days and a night. This place is 22 miles away from Clupeam and it has a convenient station for summer and it is bounded by two large promontories.

Curio sent Marcius Rufus Utica ahead with the fleet; he himself took the army and arrived at the river Bragada in two days. There he left the lieutenant Caius Caninius Rebilus with the legions; he went ahead with the cavalry to explore the Cornelian camp, because he liked this place as a site for a camp. However it is on a ridge, rising up in the sea, on both sides steep and rough, but sloping a little more gently towards Uticum; it is a little more than a mile distant from Utica in a bee line. Curio explored this place and saw the camp of Varus which was joined by a wall and the town to a gate which was called Bellica, a place very well fortified.

B. At the same time Cassius Cario setting out into Africa from Sicily even seeing the forces of Publius Attus Varus from the beginning called to this place which is called Anquillaria, two legions and the four which he had expected from Caesar, he led across five hundred cavalry and used up day and night in navigation. This place was distant from Clupea twenty-two miles and it did not have an inconvenient station in summer, and it was bounded by two eminent promontories.

Curio sent ahead Marcius Rufus Utica with the fleet; he himself set out with the same army, and advancing on two day journey came to the river Bagradam. Here he left C. Canimuin Rebelus a lieutenant with the legions; he himself went ahead with the cavalry to explore Castra Cornela because this is held in by a camp. This, however, was a straight ridge, near the sea and on both parts sharp and asper, but nevertheless a little gentler sloping from this part which lie toward Utica; it was distant from Utica in a direct journey a little more than a mile.

This place being explored, Curio saw the camp of Varus, joining the wall and town to the gate which is called Bellica, fortified in this manner by the

nature of the place, on one side by the town of Utica itself, by the other, a theater which is before the town.

After these things were done, Curio retreated to the river Bagrada and also the whole army called him general by a shout, and on the next day, he led his army to Utica and pitched camp before the town.

The work not yet being completed, the cavalry announced from their post that a great aid of cavalry and footmen sent by the king came to Utica. At the same time great strength of — was seen, and the flag of the first line of battle were seen. Curio moved by this new thing sent ahead the cavalry who should sustain the first attack and delay; he himself quickly leading out the legion from the work drew up the battle line. The cavalry began a battle and before the legions could be plainly seen and take a stand, all the aid was hindered and disturbed, because they made the journey without any order or fear. They

C. At the same time, C. Curio set out into Africa from Sicily, likewise from the beginning sending the forces of P. Atti Vari, he had received these two legions from Caesar from four; he had transported five hundred horsemen, for two days and a night they were on the sea, he called those to him who were called the Anquillaria. This place was distant from Clupea twenty-two miles not being used as a station in summer and covered two promontories.

He put Marcium Rufus Utican in charge with a fleet; he himself set out with an army and, marching for two days come to the river Bagrada. There he left C. Cananium Rebilum a lieutenant, with the legions. He himself proceeded to camp because this is the place where the

D. At the same time C. Ceerius having set out from Sicily into Africa also the troops of P. Attius Varius from the beginning, he brought across 2 legions from (horsemen f) this four which he had received from Caesar, and 100 horsemen, having taken 2 days and a night in sailing, to this place which was called Anquillaria. This place was 22 miles away from Clupea and it has not an inconvenient situation f at summer and is held in by two eminent promuntories.

Curius sends ahead Marcus Rufus Uticus with the fleet. He at the same time sets out with the cavalry and having advanced for a two day journey he came to the river Bagradam. He left there C. Caninius Rebilus, a lieutenant with these legions. He himself proceeded with the cavalry to Castra for exploring Cornelia, because this place is held by a camp.

E. At the same time when Curius set out from Sicily to Africa, P. Attius Vari also received from the first forces two legions from Caesae, he carried a cross five hundred cavalymen and the night being consumed in sailing he came to the place which was called Anquallaria. This place was about twenty-two miles from Clupea and it lead the commodities of a winter station and it held the promontaris of two emuent positions.

Marcus Rufus was placed in charge of the fleet by Varius, he himself, set out for with the army and came to the iOd which leads to the Bagrada

river. There he left Carius Rebilus the lieutenant with the legions; he himself went ahead with the cavalry to Castra which had been explored by Cornelias which place for a camp they had. This, however, is a direct alliance, prominent in the sea and fierce and barbarius in this part, but however, he

PAPERS REPRESENTATIVE OF A MAJORITY

The following papers are representative of the work of a very large number of the pupils and are typical of a majority. They were found in all years.

A. At the same time C. Curio a profectus in Africa from Sicily and from the army of P. Atti Vari. Received two legions from Caesae, howseman were transported, and at night the voage was completed. The Anquillaria were called together at a certain place. This place was about 12 miles from Clupea and had a good summer quarters and here they were held.

Curio Marciaim Rufum Uticam with the class before stated was at this time with an army making a march to the Bagradam. Here C. Caminium Rebilum a legate remained with the legions. The same was sent with the horsemen to the camp of Cornaliua. he however was ordered to cross the sea to Utican and to march from there to a part a few miles from Uticam.

The scouts sent ahead saw the walls and the town which

B. The same time Casium Carius had set out from Africa into Sicilia with two legions from the forth which had come to Caesae, the soldiers were transported, and in two days and two nights had departed in shyis, he went with them to a place which was called Anquillaria. This place was twenty thousand miles from Clupea.

Caeius Marcius Rufum, was sent with a fleet to Utica, he himself with the same army had set out and two day after he crossed the river Bagradam. When Caeius Canninuam Rebilum ambassador was left with the legions, he returned with the soldiers into camp, because this camp was in a dangerous place. He however set it on fire, and

C. In a short time, C. Curio Africa departed from Sicilia accompanied by some troops. P. Atti Vari, two legions accepted by Caesae from the forth. P transported the cavalry the second decided to navigate in the night. He was called to a place which was named Anquillaria this placabest by Clupia passed twenty-two miles, having made the station in summer and two held eminintitus promuntarus.

Curio Marcus Rufus Uticam

D. At this time C. Curio had come into Africa out of Sicilia, likewise he took the forces of P. Atti Vari, two legions out of the four which Caesar had he also brough 1,000 horses and by night he entered the place in a ship he stopped at a place called Anquillaria. This place is 2,200 miles distant from Clupea and he had to station his troops for the summer.

Curio sent Marcum Rufum Uticam forth with troops also with an army and on his march he came to the river.

E. At this time C. Curio set out into Africa from Sicily. He had the forces of P. Atti Varus to legions from the four which he had expected from Caesar and 500 cavalry to transport.

After two days and a night of sailing, he called at that place called Anquillaria. This place was 22 miles from Culpea, was not inconvenient for a summer station and was surrounded by two overhanging promontories.

Curio Marcus Rufus Uticam had come before him with the fleet.

THE POOREST PAPERS

The following are a few papers which represent those which are poorest, and which were found in large numbers in all years.

A. This—C. Curo n Africa—from Sicilia, to legions from Caesae were taken, the equites were transported by night in the ship, they were called to this location, which was named Anquillaria. This was about twenty-two miles.

Curo Marcum Rufum Utum when he command his army to progress to the river Bagradam set out before them. There C. Canium Rebilum the lieutenant he met with legions,—then came to the camp of Corneila which was in this location.

B. At this time C. Curio went from Sicily into Africa.

He took two legions from Caesar four the horses were transported, and started at night to a place which was called Anquillaria.

This place was twenty-two miles from Clupea

Curio Marcum Rufum Uticam with

C. At the same time C. Curio set out from Sicily into Africa also from the first foras Pilius Atti Vari, with the two legions from the four which he had received from Caesar called him to a place which was called Clupea by twenty two miles and

D. At the same time Curio Curio waging war in Africa from Sicily also. He was accepted by Caesae with two legions he transported the horsemen and having consumed the ship during the night he called to this place which they called Anquillaria. This place was twenty-two miles from Clupea. Continued by two eminent promontory. He sent with this fleet Curio Marcum Rufum Uticam. He himself when he had fitted out the

E. At the time of C. Curio in Africa having gone from Sicilia with a few troops with P. Atti with two legions out of five accepted by Caesar, the cavalry was transported at and stayed in ships. The name of the place where they stayed was called Anquillaria. This place was clear for twenty miles. The inhabitant had no real station it two

When C. Caninium rebelian ambassador with legioner reaming who when the cavalry.

F. At this time C. Cruio had come into Africa from Sicily, two legions from four which was accepted by Caesar, one hundred horses he had transported.

This place is by Clupea 22,—miles, and had not stayed there in summer, and two

Curio Marcus Rufum Uticam he sent before with a class; they themselves

It should be remembered that each of the above is a complete paper.

Of course superintendents of schools and principals of secondary schools are fully aware of this state of things in Latin classes. If practice in writing good English is essential to the habit of good English expression, Latin as taught is a positive detriment to the learning of English.

CHAPTER XVIII

THE TEACHING OF LATIN

GENERAL POINT OF VIEW

It is the purpose in this chapter to present a summary and interpretation of the facts brought to light in the foregoing seventeen chapters. It is not the plan, as the title of the chapter might imply, to enter into a pedagogical discussion of the subject in the sense of offering an outline of a specific method of teaching Latin or even suggestions along that line, except to the extent that they are involved in a consideration, in summary form, of the body of significant information, as a whole, disclosed by this investigation. It is felt that the study ought not to be brought to a close without an interpretation of the results in the light of all of the facts, although at various points, as the discussion has advanced, the outcome of different lines of inquiry has been considered somewhat incidentally in connection with the data at hand up to that point.

It has not been a part of the plan of this study to consider the question of the educational values of Latin or the justifiability of teaching it or its place in the curriculum or the proper time to begin it or problems of that sort. It has been necessary to limit the inquiry to the specific matters which are discussed in the preceding chapters and which center around the problem of the present efficiency of the work of the secondary schools of one State, in this subject.

The following statements are recognized as tentative conclusions. The facts brought to light in this study indicate that they are true, but of course they are subject to verification by other investigators.

SPECIFIC INTERPRETATION OF THE RESULTS AS A WHOLE

1. *The teaching of Latin at the present time is failing with a majority of the pupils in secondary schools.* Anyone who, after reading the papers written by the pupils concerned in this investi-

gation, would be disposed to claim that high schools in four years of instruction succeed in developing a real and permanent mastery of Latin would be, indeed, pursuing a fantasy. The evidence is conclusive that they are not doing so. On the other hand, there is no proof that a mastery of Latin to the extent of the acquisition of an adequate reading knowledge of the language and an efficient knowledge of the simple and common aspects of grammar is incapable of being attained in four years.

It must be said, however, that in a number of these schools Latin is taught under about as favorable conditions as could well be found and some of them secure with some pupils reasonably satisfactory results, but the majority do not succeed in developing a degree of efficiency on the part of a sufficiently large number to justify the time and effort devoted to the subject.

After having found the outcome so unsatisfactory it is important to point out the exact source of the failure. To fail thus to interpret the results of the study would be to leave it incomplete. In the following pages, an attempt has been made to do this.

The inadequacy of the work in Latin comes from three principal causes: (1) lack of adaptation of the subject as now taught to the needs of adolescent youth; (2) absence of the application of well-recognized principles of administration and pedagogy; (3) poor choice of the Latin material constituting the content of the course.

2. *Great waste occurs in Latin instruction through the inefficiency and wrong emphasis of present methods of teaching.* Detailed analysis of Latin classics is carried on with an intensity and thoroughness which are beyond all reason. Latin classes are more like clinics than courses in which inspiration is gained from studying portions of a great literature, selected with reference to the needs, interests and powers of appreciation and understanding of boys and girls. There is an extreme of pedantic persistence in requiring a mastery of unimportant details of language construction in which the pupils never really become adept. Fine distinctions and difficult abstractions, of the nature of logic, which are beyond any genuine comprehension or competent mastery by adolescent boys and girls, are insisted upon even to the point of producing effects which are intellectually deadening. Pupils are held rigidly

to account for syntax in which these things are the chief goals, often at the expense of many other matters of a distinctly human interest which youths are able to understand and from which they might derive real educational value. There is vastly too much insistence on drill and routine and far too little on inspiration.

3. *This kind of instruction in Latin is of a character which is especially poorly adapted to the needs of the pupils.* According to our present conception of the intellectual needs of the period, adolescent youths are least fitted of those of all ages from babyhood to ripe manhood for the kind of detailed and abstruse linguistic analysis previously mentioned, the emphasis upon which makes Latin a formal subject lacking in a content which is in any marked degree significant to the pupil. The structure of the language receives the chief emphasis at this most inappropriate period in the pupil's life. Thus, these aspects of Latin are barren for the pupils, unproductive of any real results as instruments of growth in their lives, useless from an educational point of view, and the attention to them is thoroughly unjustified by modern educational science. Spirit and content are sacrificed for structure and system to an extent which is pathetic.

4. *Aims in teaching Latin are vague and in many cases unjustifiable.* It is not the purpose to enter into an extended discussion of this problem. Certain things, however, are obvious.

In about a third of the schools concerned in our test the evident aim of the work is to develop ability in syntactical analysis of a Latin text. It is clear that this is the purpose, for a very large proportion of the total time given to Latin is devoted to it. The evidence clearly shows that this gives no superiority in functional knowledge of the constructions of the language. If the purpose, or at least one of the main aims of the teaching of Latin, is to develop the ability to read or translate it effectively, the end in question is not a valid one.

Many teachers will claim that the chief value of Latin comes, not from an ability to apprehend effectively the thought of the language, but from the type of mental training afforded by this linguistic analysis. Suffice it to say that modern thought in education does not justify such a view to the extent to which it is often held.

5. *The usual procedure in teaching in the first year is uneconomical.* The facts brought out in the previous chapters suggest rather emphatically that beginning the study of a language by first mastering a text similar to the ordinary beginners' book in Latin is highly wasteful.

According to the plan of most books of this kind the various lessons present grammatical principles which are explained and illustrated by sentences chosen for this purpose. In connection with this are lists of Latin words with their meanings, to be memorized. Following these is an exercise consisting of Latin sentences to be translated and English sentences to be written in Latin. These usually illustrate, mainly, the principles of the day's lesson with some review of previous work. There is a limited amount of connected Latin material for translation scattered at intervals throughout the book and a number of pages of stories at the end. More than four-fifths of the book, however, consists of the systematic presentation of the principles of syntax together with the illustrative sentences and the English and Latin exercises.

The emphasis is entirely misplaced from the point of view of economical learning. To begin the learning of anything by first mastering the principles upon which it is based, is a form of procedure which is being looked upon with decided disfavor by those who have made the most careful study of children's learning. It is quite clearly recognized by students of education that some facility in dealing with any particular subject purely as an art should be acquired at the outset before any extended study is made of the principles on which it is founded. This would require that pupils learn to translate Latin somewhat effectively,—just as they learn to talk or to read English,—before entering upon a detailed and more or less abstract study of the grammar of the language. Time and public funds are now wasted in an extravagant manner by those schools which still cling to the traditional method of teaching first year Latin.

Sufficient evidence has now been accumulated, based upon experience in the class-room, to furnish conclusive proof that, after a few introductory lessons, pupils can immediately begin to translate simple Latin sentences, that they may continue the translation of easy Latin after once getting started, and acquire familiarity

with new forms and principles of syntax by meeting them again and again in the situations in which they normally function, and that they do not need to be able to describe constructions, classify forms and state, in a formal way, principles of grammar in order to be able to react correctly to them in sentences.

There should be, then, an abundance of easy and interesting Latin material at hand from the beginning and pupils should translate a very much larger amount during the first year than is now the custom in most schools. In fact, the main emphasis should be put on this side of the work rather than on the formal study of grammar. Learning by doing should be the predominant aspect of method.

Typical procedure in teaching in the best schools represented in this study corresponded closely to the following. During the first year the equivalent of the amount of Latin found in several ordinary beginners' books was translated by the class. This was done with no preliminary study of grammar. The school placed at the disposal of the teacher a number of sets of beginners' books,—chosen largely with reference to the amount of connected material in them,—and also several sets of easy Latin story books. The teacher followed no particular book but exercised her function as a teacher in presenting orally to the class, with the use of the blackboard on which to illustrate, the minimum knowledge about usage which the pupils required, when it was needed. Probably considerably less than ten minutes a day was necessary for this and the rest of the time was spent, from the beginning, translating connected Latin. The teaching consisted almost wholly in explaining and illustrating to the class facts of usage. Pupils were never burdened with technicalities and the entire stress was put upon functional learning.

It is believed that one of the first steps necessary in a reform of Latin teaching in secondary schools is to break away from the formal and traditional methods which have prevailed in the first year in the past.

6. *The use of the class period in the upper years is uneconomical and ineffective.* A few schools translate all of their Latin at sight, using the class period practically exclusively for this purpose, and several others require a good deal of sight work. By far too many teachers, however, waste this time in listening to slow,

labored, word-by-word, literal translations which the pupils have with difficulty worked out by themselves outside of class, to recitations of rules of syntax in connection with the constructions of the day's lesson and to descriptions and classifications of Latin forms. All too rarely does one find the teacher's conception of the classroom to be that of a workshop in which teacher and pupils are working together, teaching and learning how to study effectively. A large part of the failure in Latin is doubtless due to this lack of a proper conception of his work on the part of the teacher and also by those administratively in charge of the schools.

Just as pupils are taught how to study in connection with reading in the grades, so there should be definite training in the high school Latin classes in getting the thought rapidly and efficiently.

There should be a great deal of practice in glancing rapidly over a sentence or a number of sentences or even a paragraph, sensing the meaning in the original, followed by a statement of the thought in English. Pupils would thus establish habits of grasping accurately the thought as they do in English, without being focally conscious of all the minute particulars of form and syntax. Facility in doing this well would enable Latin classes to read pages where they now read sentences and whole books where at present they read chapters. This is one of the important causes of the meager results in teaching Latin.

7. *The ordinary methods of study on the part of pupils are very uneconomical and unsatisfactory from a pedagogical point of view.* Time and energy are needlessly and lavishly squandered in the useless and unprofitable hours spent by pupils outside of school "thumbing" a Latin dictionary in "getting" lessons. Lesson-setting and reciting predominate to the exclusion of real teaching how to do by doing, in the class-room. In not more than three or four of the schools, is any effective effort made to teach, in class, how to translate. The method of simply assigning a lesson and leaving pupils to get it by themselves predominates to vastly too great a degree. The pupils' written papers in this test show the results of such unscientific procedure in their lack of ability to attack a simple Latin passage to get the thought of it effectively and put it into coherent English. Detailed notes in the text books, dealing largely with form and even philology, exist in profusion and are included

in the assignment of the lesson, often to be studied in the evening at home, amid all sorts of distractions. Pupils are required to "prepare their syntax" with precision and exactness in their care for the most minute details of form. Rules must be learned and constructions classified and, after being kept under the most thorough instruction and rigid drill for four years, a little over fifty per cent accuracy in knowledge of construction is the best that pupils can do.

8. *The present teaching of prose composition contributes almost nothing to ability to read or translate Latin.* The evidence indicates that here is an important source of waste. Secondary school pupils never reach such a point that they can write Latin automatically. The pupil is obliged to hold in mind, as he writes, and consciously apply a multiplicity of facts of form and syntax, and as a result his writing in Latin is slow, labored and difficult. In composition, one does the reverse of what he must do in order to read well. He who is obliged in reading to give attention to textual details can never interpret the thought well and rapidly. There is plenty of proof that it is possible to read a language effectively without being able to use it in writing.

The evidence growing out of this investigation throws serious doubt on the value of Latin composition. May it not be that in the early stages of learning Latin,—say the first three years,—it is a direct hindrance to the process of acquiring a ready and effective grasp of the thought of the Latin? Certainly it appears to do little or no good as far as its main alleged purpose is concerned, i. e., to clarify principles of syntax in order to enable pupils to translate better. The plain fact is that three years of teaching and drill and a large time expenditure on the part of the schools which emphasize it most, produce no particular superiority in ability to translate or in knowledge of construction.

9. *It is difficult to understand how the present teaching of Latin can have anything but a bad effect on pupils' English expression.* In making this statement we are judging wholly on the basis of the kind of English which they used in their papers. The majority of the papers were seriously defective from the point of view of English composition. If these papers represent the pupils' habitual method of use of English in translation, the study of Latin is about

as well calculated as anything could be to prevent the development of any habits of vigor, clearness and correctness of expression.

Observation of the work in Latin classes leads the writer to believe that these papers do represent a use of English in translation which is nearly universal. Such a thing as good sentence-sense on the part of pupils and excellent, clear-cut sentence structure in translation, as far as these papers are concerned, is extremely rare.

10. *A large part of the present failure in teaching Latin is due to the lack of application of principles well known in elementary school practice which are now finding wide application.* Almost nowhere in the schools concerned in this study are Latin teachers effectively diagnosing class and individual needs. Great educational waste occurs at this point. Many pupils of superior ability work for several years in classes in which the majority of the members are far below their ability and thus they do only a half or a third of what they are capable of doing. On the other hand, pupils of inferior ability are kept in classes in which the majority of the pupils are four or five times as capable as they are. Thus, they fail continually. All of the Latin classes above the first year represent all grades of ability. By properly classifying the pupils into divisions on this basis, the working ability of the entire group of pupils studying Latin doubtless would be increased several fold. An educational system which pretends to be founded on scientific principles can no longer tolerate such a wasteful practice as now prevails in this particular.

11. *There should be a better choice and more interest and variety in the Latin material.* The traditional round of Cæsar, Cicero and Vergil, with a year devoted to each, is particularly unsuitable material for the secondary course. In the first year, there should be a good deal of easy material for translation or reading, such as stories, fables, history and mythology. In the other years, a wide range of authors should be covered. Some of the schools among the number tested study, above the first year, Cicero's *De Senectute* and *De Amicitia*, Eutropius, Tacitus' *Germania* and *Agricola*, Nepos, Horace, Ovid, Pliny and a great deal of similar material. One school devotes nearly all of its senior year to authors usually studied in college.

Our present method of teaching Latin, as far as the content of the course is concerned, would be like attempting to teach English to thirteen or fourteen-year-old foreigners by a purely grammatical method based upon study of abstract linguistic principles. At the outset there would be a year of severe and unremitting drill on the principles of grammar, in a highly abstract form, with the facts illustrated by formal exercises, consisting largely of isolated sentences, supplemented by a limited amount of reading of connected material. Following this would be three years more of study, almost entirely from the point of view of language constructions, philology, principles of prosody and such matters, of very limited portions,—thirty or forty pages to a year,—of Grant's *Memoirs*, Webster's *Orations* and Milton's *Paradise Lost*. This would be accompanied by still more study of grammar, combined with the writing of many isolated sentences and a few connected passages, for the purpose of clarifying the construction of each writer. Such a procedure is only a little short of pathetic. No one would expect boys and girls to gain a useful command of English reading or the appreciation of literature in that way, nor would it be probable that they would even master English grammar by such a method, no matter to what extent it was made the end and aim of the course.

CONCLUSION

By no means are all of the defects discussed in this chapter common to all schools, but they are sufficiently widespread, in the judgment of the writer, after several years of study of Latin instruction combined with the facts brought out in this investigation, to be the cause of the present unsatisfactory results. There is no school in which none of these inadequacies can be found, and they exist in varying degrees in all of them.

If Latin is a subject which is capable of mastery by high school pupils, this end could probably be achieved by any school, under normal conditions, which succeeding in freeing itself from all of these faults, and it is quite likely that it would be necessary for a school to rid itself completely of them before it could expect to attain an entirely satisfactory result with an economical expenditure of time and effort.

APPENDIX A
DISTRIBUTION TABLES FOR LATIN SENTENCE TEST B

ABILITY TO TRANSLATE LATIN SENTENCES

LATIN SENTENCE TEST B

Distribution Table for Number of Sentences Translated Correctly
YEAR I

School	Sentences																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	9	4	2	8	2																
2		7	4	1	1																
3		4	2	1																	
4		4	1																		
5		2	14	9	7	1	4	2	1	1											
6		1	5	1																	
7		2	7	4	1																
8																					
9		3	1	4	1	2		2													
10		1	14	2																	
11		4	10	4	3	2		1	1			1									
12		1	3	2	8																
13		5	64	6	1																
14			5	5	2			1													
15		2	8	3																	
16		7	124	56	7	1		1													
17		13	21	2	2																
18		1	7	14	3																
19		1	8																		
20																					
21		8	75	22	1		1	1													
22		1	7	14	1	1	1	1													
23		1	7	16	4	1															
24		1	5	7																	
25			5	11	19	10	4	1													
26		4	6	4																	
27		1	12	1																	
28																					
29		1	1	1	1																
30		4	12	6																	
31			80	21	6																
32				4																	
33			4	5	4																
34			8	10	1																
					1																
Total	50	449	278	86	48	15	5	7	2		1		1								

ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Distribution Table for Number of Sentences Translated Correctly
YEAR II

School	Sentences																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	...	...	1	2	1	...	...	2	1	...	...	...	2	1	...	...	...	...
2	...	1	8	5	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	...	2	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	3	16	8	7	2	...	2	1	...	4	5	3	1	...	...	...	...	...	...	...
6	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	1	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	...	1	3	2	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
9	3	2	2	2	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...
10	...	5	7	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	2	6	...	...	...	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...
12	1	3	3	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	4	5	4	1	4	3	1	1	...	...	...	...	...	...	...	...	...	...	...	...
14	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	...	1	...	3	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
16
17	1	4	19	27	28	18	12	3	2	8	...	1	1	...	1	...	...	...	...	...	...
18	...	3	8	8	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...
19	1	3	6	6	1	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	1	3	8	2	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	...	8	2	4	3	1	1	2	2	...	...	...	...	...	...	...	...	...	...	...	...
23	1	2	2	1	3	1	...	2	2	...	...	...	...	...	...	...	...	...	...
24	...	3	6	5	2	1	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...
25	3	2	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	2	1	1	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	3	6	2	3	4	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...
28	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
29	1	...	...	1	1	1	1	1	1	1	1	...	...	...	...	...	...
30
31	...	1	5	4	3	2	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...
32	...	5	13	11	6	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	1	2	2	6	6	1	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...
34	1	1	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	1	...	2	1	4	3	...	1	8	...	...	...	...	...	...	...	...	...	...	...	...
Total	13	60	182	121	98	55	47	28	15	6	9	7	5	1	8	2	1	...	...	...	...

ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Distribution Table for Number of Sentences Translated Correctly
YEAR III

School	Sentences																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	2	15	32	49	45	46	47	44	21	18	9	9	3	3	1	1	2	1	1	1	1

ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST B
Distribution Table for Number of Sentences Translated Correctly
YEAR IV

School	Sentences																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1					1	1				1			2								
2				1		4		2				1									
3			1	2		1															
4								2		1	1		1	3		3					
5					2	2							1								
6					1	1		2		2			1	1		1					
7			1	2	1	1			1												
8				1	1	1			1	1											
9				2	1					2											
10															1						
11																					
12			2			3		1		1			1								
13								2	1												
14		1	3	1	1	1		1													
15																1					
16			1	3	4	5	8	1	2	1	2				2						
17						3	3	6	4	3	2	1	1	1							
18		2	5	1	8	1	2	2	2	1											
19			3							2											
20				1	1	1	1	1													
21		3		3	2	1															
22			1			2			1	1											
23						1				2											
24			1	1	1	1					1										
25						1	2	1													
26		2	1	1	1	1	1	1	1												
27					1	1	1														
28																					
29																					
30					2			2	1	8	2			1							
31				1	3	2									1						
32				2		2															
33										1				1							
34								1													
Total	9	23	25	31	38	33	23	23	19	19	3	8	9	4	5	1				....

ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Distribution Table for Number of Sentences Translated Correctly
YEAR III

[illegible]

ABILITY TO TRANSLATE LATIN SENTENCES
LATIN SENTENCE TEST A
Distribution Table for Number of Sentences Translated Correctly
YEAR IV

School.	Sentences																															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	1	...	1	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...
2	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5
6	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
7	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
10	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	4	1	...	2	1	...	...	8	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...
18	...	1	1	...	...	...	...	...	1	2	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	1	...	...	2	...	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	1	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	1	...	...	...	1	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	1	1	1	...	...	3	1	7	6	6	6	9	7	13	3	6	9	3	6	...	4	4	6	...	2	1	...	...	...	...	...

APPENDIX C
DISTRIBUTION TABLES FOR CONNECTED LATIN TEST
ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Distribution Table for Amount Attempted
In Terms of Number of Points of the Key
YEAR II

School	Points of Key																					
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	
1	2	1	2	2	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
2	2	2	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	2	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
Total	5	2	23	32	54	125	68	121	41	20	14	13	8	3	.....	.....	.....	.....	2	1	.....

ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Distribution Table for Amount Attempted
In Terms of Number of Points of the Key
YEAR III

School	Points of Key																					
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	
1	1	1	1	2	3	...	1	...	...	...	...	...	...	...	...
2	2	2	1	...	...	...	...	...	...	...	...	...	...	...
3	1	2	2	1	2	...	2	...	...	...	...	...	...	...	...
4	1	2	5	...	...	...	...	...	1	...	...	...	...	...	...
5	
6	2	1	...	...	...	...	...	...	...	...	...
7	1	1	3	...	...	...	...	...	...	...	...
8	2	1	1	2	...	2	3	2	1	...	...	2	...	...	...
9	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	1	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...
11	1	3	2	2	3	...	2	...	...	...	...	...	...	...	...	...
12	1	...	...	...	...	...	...	...	...	...	...	...
13	1	...	...	...	...	...	...	...	...	...	...
14	3	...	1	1	...	...	...	...	...	...	...	...	...
15	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	3	4	4	20	1	6	1	...	1	...	...	...	...	...	...	...	...	...
17	1	...	4	9	10	3	...	...	...	...	...	...	...	1	...	...	...
18	3	5	3	1	1	5	1	...	...	...	...	...	...	...
19	1	2	...	1	2	...	...	...	...	...	...	...	...	...
20	4	4	...	...	...	...	...	...	...	...	...	...	...
21	1	...	1	1	2	5	...	8	...	1	...	...	...	...	...	...	...	...
22	1	1	...	...	...	...	...	...	...	...	...	...	...	...
23	1	5	2	...	1	1	...	...	...	...	...	...	...	...
24	2	1	1	...	...	...	...	...	...	...	...
25	5	8	6	5	1	2	...	...	...	...	...	...	...	...	...
26	1	1	1	3	1	...	...	1	...	...	...	...	...	...	...	...	...
27	
28	
29	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...
30	4	...	2	...	...	...	...	...	...	...	...	...	...	...
31	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	2	...	...	...	...	...	...	...	...	...	...	...	...
33	
34	
Total	2	5	7	12	57	44	76	41	18	15	15	8	8	1	...	1	2	...	...

ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Distribution Table for Amount Attempted
In Terms of Number of Points of the Key
YEAR IV

School	Points of Key																					
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	
1	2	2	2	...	...	1	...	...	...	...	...	...	...	...	...
2	1	...	4	3	1	...	1	...	...	...	...	...	...	...	...
3	1	...	...	...	...	...	...	...	...
4	2	1	2	...	...	...	...	...	...	...	...	...	...	...
5	3	1	...	...	...	...	...	...	...	...	...	...
6	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...
7	1	...	...	...	...	...	...	...	...
8	1	1	1	2	3	...	1	2	...	...	...	...	...	...	...
9	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	1	...	1	2	1	1	3	...	2	...	...	...	...	...	...	...	...
11	2	1	...	1	...	2	2	...	...	...	...	...	...	...	...
12	
13	3	2	2	3	2	...	...	...	...	...	...	...	...	...	...
14	1	3	1	...	...	...	...	...	...	...	...	...	...
15	
16	1	5	6	8	9	...	...	...	...	...	...	...	...	...	...	...	...	...
17	4	3	16	10	1	1	1	2	...	...	...	...	...	...	...
18	2	5	3	2	2	3	1	...	...	...	...	...	...	...
19	1	...	...	...	...	1	1	1	...	1	1	...	...	...	...	...	...	...	...
20	5	...	...	...	...	...	...	...	...	...	...	...	...
21	1	...	2	1	...	...	3	2	...	...	...	...	...	...	...
22	1	1	2	2	...	...	1	...	...	...	...	...	...	...	...
23	1	1	4	1	...	1	1	...	...	...	...	...	...	...	...
24	1	1	2	1	2	...	...	...	...	...	...	...	...	...
25	2	...	2	2	...	...	1	...	...	...	...	...	...	...	...
26	2	2	...	...	...	...	...	...	...	...	...	...	...	...
27	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	1	...	...	...	...	...	...	...	...	...	...	...	...
30	2	...	3	1	...	1	...	...	...	...	...	...	...	...	...
31	5	...	...	...	...	...	2	2	6	2	...	...	...	...	...	...	...	...	...	...	...
32	1	...	...	...	...	...	...	...	...	...	...	...	...	...
33	
34	
Total	5	....	1	4	8	9	38	30	68	43	15	16	16	8	....	....	....	....	....	....	....

ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Distribution Table for Amount Correct
In Terms of Number of Points of the Key
YEAR III

School	Points of Key																					
	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	
1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
Total	8	13	24	50	67	63	46	29	6	4	1	1	...	...	1	...	...	...	...	...	...

ABILITY TO APPREHEND THE MEANING OF LATIN
CONNECTED LATIN TEST
Distribution Table for Comprehension
In Terms of Number of Points of the Key
YEAR II

School	Comprehension																						Total
	0	.01-.05	.06-.10	.11-.15	.16-.20	.21-.25	.26-.30	.31-.35	.36-.40	.41-.45	.46-.50	.51-.55	.56-.60	.61-.65	.66-.70	.71-.75	.76-.80	.81-.85	.86-.90	.91-.95	.96-1.00		
1	...	...	...	1	...	...	2	1	1	...	...	1	...	1	...	...	...	2	...	...	...
2	...	...	...	3	1	...	...	2	1	...	...	2	1	...	...	...	1	...	...	...	...
3	...	...	...	2	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...
4	...	2	...	3	...	1	...	...	...	1	...	...	1	4	...	5	2	4	3	1	...
5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	...	...	3	5	2	...	...	1	...	2	...	1	...	...	...	...	...	...	...	...
7	1	1	...	2	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
8	4	5	1	2	1	...	...	...	...	1	...	8	...	...	1	...	1	...	...	...	...
9	...	...	...	2	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...
10	2	2	...	1	1	1	2	6	...	3	1	2	2	...	...	...	...	...	...	...	...
11	...	...	...	1	...	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...
12	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	2	...	1	2	...	1	...	4	1	...	...	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	2	1	5	6	5	7	7	8	9	12	8	6	5	5	1	1	...	3	2	1	1		
17	2	2	2	5	1	3	4	4	...	2	2	2	2	2	...	1	1	1	...	...	...
18	3	1	3	...	2	4	...	3	...	...	...	...	...	...	1	...	...	...	...	...	...
19	...	...	...	2	...	2	1	1	1	2	1	...	1	...	...	...	1	...	...	...	...
20	...	1	...	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
21	...	1	...	1	1	2	...	...	1	3	3	8	4	...	1	2	...	...	...	...	...
22	...	...	...	...	...	...	2	1	1	2	1	1	...	2	...	...	...	...	1	1	...
23	...	2	1	1	3	...	2	3	...	...	...	...	...	...	1	2	...	...	...	...	...
24	...	...	1	...	...	1	2	1	2	1	1	1	...	...	...	...	...	...	...	...	...
25	...	...	2	2	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	...	2	2	2	...	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...
27	4	1	4	2	2	1	1	...	1	...	...	...	5	...	1	...	...	...	1	...	...
28	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
30	...	1	1	...	1	2	2	1	...	1	...	2	2	...	...	...	...	...	...	1	1
31	6	1	4	3	3	2	...	1	4	6	2	2	2	2	1	2	...	1	...	...	...
32	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	25	25	24	43	33	36	35	35	35	43	42	35	28	22	13	18	7	13	9	2	2		

ABILITY TO APPREHEND THE MEANING OF LATIN

CONNECTED LATIN TEST

Distribution Table for Comprehension

In Terms of Number of Points of the Key
YEAR IV

School	Comprehension																				Total
	0	.01-.05	.06-.10	.11-.15	.16-.20	.21-.25	.26-.30	.31-.35	.36-.40	.41-.45	.46-.50	.51-.55	.56-.60	.61-.65	.66-.70	.71-.75	.76-.80	.81-.85	.86-.90	.91-.95	.96-1.00
1	1	1	...	...	...	...	...	...
2	2	2	...	...	...	...	...	...
3	1	1	...	...	...	...	...	...
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
Total	5	1	2	7	7	9	8	16	20	22	20	26	18	15	19	16	10	16	14	4	5

APPENDIX D DISTRIBUTION TABLES FOR LATIN GRAMMAR TEST

ABILITY IN LATIN GRAMMAR Distribution Table for Number of Constructions Correct YEAR I

School	Constructions																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	10	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	2	2	1	2	4	3	7	4	11	12	4	5	6	4	2	1	1	1	1	1	1
5	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	5	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	11	7	3	1	1	2	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1
10	9	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	2	8	2	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
12	22	4	2	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	2	2	1	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	18	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	27	22	21	25	12	7	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1
16	32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	25	9	3	2	4	2	1	2	3	3	1	1	1	1	1	1	1	1	1	1	1
22	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	18	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	4	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	5	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	10	9	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	18	18	5	6	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	8	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32	8	2	2	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	254	116	73	60	41	32	22	26	21	29	16	10	8	4	2	1	1	1	1	1	1

ABILITY IN LATIN GRAMMAR
Distribution Table for Number of Constructions Correct
YEAR II

School	Constructions																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	2	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	3	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	2	4	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	2	6	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14	7	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
16	51	1	2	1	7	4	4	8	8	8	10	8	4	1	1	8	1	1	1	1	1	
17	7	10	8	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18	9	4	4	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
19	1	1	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
20	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
23	8	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	1	5	3	7	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
27	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
29	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
32	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total	116	64	45	54	50	40	32	41	26	31	22	21	12	11	6	7	3	4	4	2	....

ABILITY IN LATIN GRAMMAR
Distribution Table for Number of Constructions Correct
YEAR III

School	Constructions																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2
3	1	1	1	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
4
5
6	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	2	4	1	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8
9	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	3	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13
14
15	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16
17	4	1	5	2	2	2	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	3	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19
20
21	2	2	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22
23
24
25	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26
27
28
29
30
31
32
33	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34
35
Total	18	15	21	31	31	21	30	28	26	24	22	19	17	16	20	10	8	4	1	2	....

ABILITY IN LATIN GRAMMAR
Distribution Table for Number of Constructions Correct
YEAR IV

School	Constructions																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	1	1	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	9	20	14	14	26	17	17	26	12	26	12	19	13	19	11	10	12	11	10	6	....

ABILITY IN LATIN VOCABULARY
Distribution Table for Number of Words Correct
YEAR II

[illegible]

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ABILITY IN LATIN VOCABULARY
Distribution Table for Number of Words Correct
YEAR IV

APPENDIX F
CONVERSION TABLE FOR P. E. VALUES¹

P. E. Values Corresponding to Given Per Cents of the Normal Surface of
 Frequency, Per Cents Being Taken from the Median

Per Cent	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
0	.000	.004	.007	.011	.015	.019	.022	.026	.030	.033
1	.037	.041	.044	.048	.052	.056	.059	.063	.067	.071
2	.074	.078	.082	.085	.089	.093	.097	.100	.104	.108
3	.112	.115	.119	.123	.127	.130	.134	.138	.141	.145
4	.149	.153	.156	.160	.164	.168	.172	.175	.179	.183
5	.187	.190	.194	.198	.201	.205	.209	.213	.216	.220
6	.224	.228	.231	.235	.239	.243	.246	.250	.254	.258
7	.261	.265	.269	.273	.277	.280	.284	.288	.292	.296
8	.299	.303	.307	.311	.315	.318	.322	.326	.330	.334
9	.337	.341	.345	.349	.353	.357	.360	.364	.368	.372
10	.376	.380	.383	.387	.391	.395	.399	.403	.407	.410
11	.414	.418	.422	.426	.430	.434	.437	.441	.445	.449
12	.453	.457	.461	.464	.468	.472	.476	.480	.484	.489
13	.492	.496	.500	.504	.508	.512	.516	.519	.523	.527
14	.531	.535	.539	.543	.547	.551	.555	.559	.563	.567
15	.571	.575	.579	.583	.588	.592	.596	.600	.603	.608
16	.612	.616	.620	.624	.628	.632	.636	.640	.644	.648
17	.652	.656	.660	.665	.669	.673	.677	.681	.685	.689
18	.693	.698	.702	.706	.710	.714	.719	.723	.727	.731
19	.735	.740	.744	.748	.752	.756	.761	.765	.769	.773
20	.778	.782	.786	.790	.795	.799	.803	.807	.812	.816
21	.820	.825	.829	.834	.838	.842	.847	.851	.855	.860
22	.864	.869	.873	.878	.882	.886	.891	.895	.900	.904
23	.909	.913	.918	.922	.927	.931	.936	.940	.945	.949
24	.954	.958	.963	.968	.972	.977	.982	.986	.991	.996
25	1.000	1.005	1.009	1.014	1.019	1.024	1.028	1.033	1.038	1.042
26	1.047	1.052	1.057	1.062	1.067	1.071	1.076	1.081	1.086	1.091
27	1.096	1.101	1.105	1.110	1.115	1.120	1.125	1.130	1.135	1.140
28	1.145	1.150	1.155	1.160	1.165	1.170	1.176	1.181	1.186	1.191
29	1.196	1.201	1.206	1.211	1.217	1.222	1.227	1.232	1.238	1.243
30	1.248	1.253	1.259	1.264	1.269	1.275	1.279	1.286	1.291	1.296
31	1.302	1.307	1.313	1.318	1.324	1.329	1.335	1.340	1.346	1.351
32	1.357	1.363	1.368	1.374	1.380	1.386	1.391	1.397	1.403	1.409
33	1.415	1.421	1.427	1.432	1.438	1.444	1.450	1.456	1.462	1.469
34	1.475	1.481	1.487	1.493	1.499	1.506	1.512	1.518	1.524	1.531
35	1.537	1.543	1.549	1.556	1.563	1.569	1.576	1.582	1.589	1.595
36	1.602	1.609	1.616	1.622	1.629	1.636	1.643	1.649	1.656	1.663
37	1.670	1.677	1.685	1.692	1.699	1.706	1.713	1.720	1.728	1.735
38	1.742	1.749	1.757	1.765	1.772	1.780	1.788	1.795	1.803	1.811
39	1.819	1.827	1.835	1.843	1.851	1.859	1.867	1.875	1.884	1.892
40	1.900	1.909	1.918	1.926	1.935	1.944	1.953	1.962	1.971	1.979
41	1.988	1.997	2.007	2.016	2.026	2.035	2.044	2.054	2.064	2.074
42	2.083	2.093	2.103	2.114	2.124	2.134	2.145	2.155	2.166	2.177
43	2.188	2.199	2.211	2.222	2.234	2.245	2.257	2.269	2.281	2.293
44	2.305	2.318	2.331	2.344	2.357	2.370	2.384	2.397	2.411	2.425
45	2.439	2.453	2.468	2.483	2.498	2.514	2.530	2.546	2.562	2.579
46	2.597	2.614	2.631	2.648	2.667	2.686	2.706	2.726	2.746	2.767
47	2.789	2.811	2.834	2.857	2.881	2.905	2.932	2.958	2.986	3.015
48	3.044	3.077	3.111	3.146	3.182	3.219	3.258	3.300	3.346	3.395
49	3.450	3.506	3.571	3.643	3.725	3.820	3.938	4.083	4.275	4.600

¹ The above table is taken directly from Buckingham and is a modification of a table given by Thorndike.

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